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AND THE

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS, M.D., LL. D.

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CHICAGO, JANUARY 7, 1888.

No. 1.

A CLINICAL LECTURE

ON

TUBERCULAR MENINGITIS.

Delivered at the Woman's Medical College, Chicago, Ill.

BY DANIEL R. BROWER, M.D.,

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM, DIDACTIC AND CLINICAL, IN THE WOMAN'S MEDICAL COLLEGE; LECTURER ON THE PRACTICE OF MEDICINE IN RUSH MEDICAL COLLEGE, CHICAGO, ILL.

(Reported by WILLIAM WHITFORD.)

The subject for this morning's consideration is tubercular meningitis; basilar meningitis; acute hydrocephalus; an inflammation of the membranes of the brain that has its origin in the deposition of milary tubercles. These milary tubercular deposits occur mainly in the blood-vessels of the pia mater. It is an uncommon thing for the dura mater to be involved in this process. They form in the perivascular spaces and in the walls of the blood-vessels; they occur by preference in the area of distribution of the Sylvian artery.

These milary tubercles depositing themselves in the walls, contracting the cerebral blood-vessels, filling up the perivascular spaces, blocking the blood current, give rise to thrombosis, softening of the vessel, and to extravasation of blood. They also occur in other vessels at the base of the brain. These milary tubercles are the source of irritation; they obstruct the blood current in the way we have indicated, and give rise to inflammation of the cerebral membranes with subsequent exudations, and to an immense outpouring of serum into the ventricles, so that we have three stages in the pathological history, and as we shall subsequently see, these three stages give rise to three stages in the clinical history of the disease. We have first the deposition of tubercles, producing irritation, interfering with the blood supply. Then, later on, as the milary tubercles increase, and the circulation becomes more and more interfered with, an inflammatory exudation begins to take place, giving rise to the clinical history characteristic of the second stage of the disease. The outpouring of serous effusions into the ventricles of the brain gives rise to the symptoms characteristic of the third stage of the disease.

Its clinical history is, first the period of invasion, the time when the child begins to be sick from the deposition of milary tubercular deposits—deposits which are exceedingly small—sometimes so small as not to be recognized by the naked eye. A milary

tubercle is about the size of a millet seed, but by a process of aggregation they may become large masses.

A child so troubled begins to be emaciated—emaciation especially marked about the lower extremities. Children with this disease are usually very bright. There is in connection with this milary tuberculous condition a precocity. For instance, you take the ordinary form of tuberculosis—phthisis pulmonalis—people so afflicted are often above the average in mental capacity. Indeed, some of the most brilliant people the world has ever produced have been, and are, patients with this tubercular diathesis. So in this disease, with such tuberculous inheritance, children are precocious, bright, smart, beyond their years. They begin to be fretful, irritable, peevish, and complaining; nothing satisfies them. While at play, a child so afflicted, will suddenly stop, and claspings its hands to its head will cry out with pain. The appetite fails; the tongue becomes a little coated, and sometimes a little thickened in appearance; there is a slight, perceptible rise in the evening temperature; a little cough; a loathing and disgust for food; there is a variation of the pulse; sometimes constipation, and sometimes diarrhœa. The prodromic period of irritation lasts a month, or perhaps two months, and these symptoms often pass unnoticed by the parents.

After a time we begin to have symptoms characteristic of the development of tubercular meningitis—the first stage proper. We have as one of its most striking and early symptoms, vomiting. The child vomits without any provocation from food, and this vomiting is of a most peculiar character, and once seen is never to be forgotten. There is no nausea; but an immense outpouring of fluids from the stomach. Sometimes the character of the fluid is that of simple mucus; in a word, there is prodigious, projectile vomiting without any apparent cause from the ingestion of foods. This cerebral vomiting unattended by nausea, is an important element in the diagnosis.

The child begins to complain of headache, to show signs of intense pain. It puts its hands to its head and cries out frequently with great pain, and this pain, let me say, is of a most intense, excruciating character. I think there is no pain so intensely acute, severe, and overwhelming as the headache of tubercular meningitis. Associated with it is more or less motor disturbance, and, by the way, we may state here in passing, that the beginning, the progress, and order of symptoms of the disease depend largely

upon the place where the miliary tubercles are first deposited. If they are deposited primarily in the area of the cerebral artery, the motor disturbance at the outset will be quite marked, manifesting itself in the way of spasms, twitchings of the facial muscles, jerkings of the limbs, muscular tremors, etc. Sometimes when the disease commences in this area, and is progressing rapidly, epileptiform convulsions are ushered in. Then, at about this time, certain sensory disturbances manifest themselves; there is general hyperæsthesia; a great intolerance of lights and of sound; the pupil is contracted; the child is intolerant of the least possible effort at movement; walking across the room will give it intense pain. Frequently, we have too, certain psychical symptoms; evidences of mental disturbance. If the deposition of miliary tubercles begins or takes place in the anterior cerebrum, the area of disturbance being there, it has more to do with the intellectual manifestations of the patient, and the psychical symptoms are early and prominent ones. The child becomes more emotional and irritable; a little delirium begins to show itself just as the child is going to sleep or waking up. When it awakens, it does so with an intense cry—a cry so heart-rending and peculiar that it has been called the “hydrocephalic cry.”

We find a disturbance in the vaso-motor area of the nervous system. If you take your finger nail and draw it over the thoracic and abdominal areas, especially where the two areas unite, it will speedily be followed by a bright red line that will remain there for, perhaps, several moments—the “tache cerebrale” of Trousseau. While it is not pathognomonic of tubercular meningitis, yet it is rarely found in any other disease of the body that does not involve this inflammatory, irritative condition of the cerebral membranes. It is the beginning of this form of nervous disease. This “tache cerebrale” is found early, and is the result of interference with the activity of the vaso-motor nervous system.

The abdomen at this time presents a peculiar “boat-shaped” appearance, an important point in the diagnosis, from the fact that in other infantile diseases which closely resemble tubercular meningitis, it is usually found tympanitic, distended, but in this disease it is retracted; the umbilicus is thrown well back towards the spinal column, so that it presents what is admirably termed “a boat-shaped appearance.”

The temperature of the disease is well worthy your careful consideration. There is from the beginning of the prodromal period a slight rise in temperature, and when the first stage of the disease has become established, the evening temperature will be found to be one or two degrees higher than that of the morning, but it rarely ever rises above 103°, except when the disease is about to terminate fatally. The exacerbations and remissions are irregular; they do not pursue that regular, uniform course which is characteristic of the disease that closely resembles it, namely, remittent fever. The condition of the pulse is important in the beginning of the disease. It is usually full, compressible, regular. During the stage of irritation, when you have the vomiting, to

which I have alluded, and sensory disturbance, the pulse, as a rule, is regular, and not unduly fast, which is another important aid in the differential diagnosis. Respirations are regular, and become more rapid than normal in the early history of the case. During the primary stage, we have another symptom of great value, and that is constipation of a very obstinate character. Ordinary doses of laxatives are entirely inefficient to overcome it.

Now, as the disease progresses, and the exudations begin to appear, a change manifests itself in the symptoms, and in the majority of cases you will flatter yourselves that your treatment has been a success, and that your patient is convalescing. The vomiting ceases; the headache disappears; the muscular spasms and convulsive movements cease to a greater or less extent; the child is no longer intolerant of light and of sound; the contracted pupil begins to become normal in character, and for a few days it would seem the patient was certainly getting better. But very suddenly there comes an increase in the mental hebetude; an increase in all the psychical symptoms. The delirium becomes more marked; the tendency to sleep becomes greater, and the child loses almost altogether its active responses to external impressions; it becomes, in a word, dull, heavy, soporous. Along with this condition, we have alterations in temperature. The characteristic remissions of the first stage disappear; the temperature, as a rule, falls below normal, the fever disappears, the pulse becomes slow and irregular, respirations become irregular, and we have that respiration characteristic of pressure made upon the medulla, the so-called “Cheyne-Stokes respiration,” which consists in a respiratory manifestation by a series of cadences. The respiration will be normal in one or two movements, and then the depth of the movements will seem to increase, and the interval between the respiratory connections increases until the respirations gradually fade away, and for several seconds cease, after which they again become more manifest. The interval will be shortened in its duration, the respiratory action will be increased until they again become normal, following which is a retrocession, until the respiratory action ceases, and so the respiratory phenomena continue. The peculiar character of the respirations will, as a rule, manifest itself at night. During the whole day the respirations will, perhaps, be normal, but as night approaches this peculiar, medullary respiratory action, characteristic of pressure made upon the medulla, and named after the two distinguished pathologists, Cheyne and Stokes, comes on. Exudation has been going on, the effusion of serum has increased, and we gradually begin to get more pressure upon the important structures at the base of the brain, and as a consequence we have a very great increase in the comatose condition. It becomes now almost impossible to arouse the child, and along with this increased coma there occurs a very remarkable change in the pulse. The pulse, which had been normal, now becomes exceedingly frequent, reaching from 150 to 170 beats in a minute, and associated with this great rapidity of the pulse is more or less irregularity; the beats are not

of the same intensity. During this stage of the disease the spasms that characterize the motor disturbance at the outset develop into paralysis. You will find one side of the face, or some member of the body, such as an arm, or a leg, or both, paralyzed. Just before death ensues, as a rule, we have decided elevation of temperature, the temperature frequently running to 105°, and paralysis before the scene closes becomes generally diffused.

Now, as to certain points in the diagnosis of this disease. It is liable to be mistaken for ordinary acute meningitis, for gastro-enteritis, for infantile remittent fever, for acute Bright's disease. We told you at the beginning of the lecture that tubercular meningitis was basilar; that the base of the brain was involved in the pathological processes. It is a most uncommon thing to find any of these miliary tubercles elsewhere in the brain. The convexity of the brain escapes, except in so far as it becomes involved later along from pressure of serous and purulent exudations.

A surface thermometer will aid you in diagnosis. There is a certain fixed relation, in a state of health, between the temperature of different parts of the head, as rudely shown in this hastily prepared diagram. Taking the left side of the brain, we have here (illustrating) three areas designated, the frontal, the parietal, and occipital, corresponding to the three divisions of the surface of the cerebrum. The temperatures shown in the diagram are determined by examination of different classes of people in Brooklyn and New York, by the distinguished specialist, Dr. Gray. In the temporal region, as you see, the temperature is 94.2°; over the parietal, 94.3°; in the occipital, 92.3°. On the right side the temperatures are generally lower, the right side, of course, having less functional cerebral activity than the left. The frontal temperatures are lower than those of the occipital in tubercular meningitis. The relation is disturbed. The occipital area is where the disease spends its force largely. The relations of the areas

symptoms enumerated, will serve to make the diagnosis clear. We have also, in the first stage of the disease, a contracted, mobile pupil. In the second stage the pupil dilates a little, is immobile and insensible, so far as contact with light is concerned. There is not only dilatation of the pupil, but certain important changes take place around the pupillary margin. About the sixteenth of an inch or less from the margin proper there begins to form a distinct wreath of white clouds (see diagram 1, doubtless due—as has been determined by Dr. John D. Skeer, of this city, who was the first physician to discover this pathognomonic symptom—to changes in the iris and the deposition of minute, miliary tubercles upon the vessels. Now this is to be seen only in the incipient stage of the disease, and when you have associated with the symptoms we have described, this characteristic condition of the iris, you are absolutely certain of your diagnosis of tubercular meningitis. Unfortunately, this symptom is not always present, just as other classical symptoms are sometimes absent in other diseases. If this condition of cloudiness around the pupillary margin happens to be present, after three or four days it begins to disappear. Instead of minute, cloud-like masses, we have a yellowish-brown circle (see diagram 2), this change taking

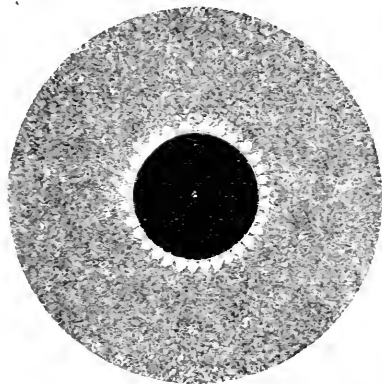


Diagram 1. Wreath of white clouds.

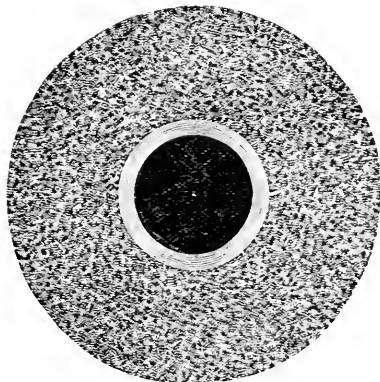


Diagram 2. Yellowish-brown circle.

then are disturbed, and this, associated with the other

place at the beginning of the second stage, due, doubtless, to degeneration of the blood-vessels and tissues as a consequence of the presence of miliary tubercular deposits. In the third stage this yellowish brown circle becomes very much attenuated by the dilatation (see diagram 3) of the pupil. There seems to be, in addition to the miliary tubercular deposit, a destruction of the circular muscular fibres of the iris; the pupil ceases to be responsive to light; it becomes immovable. Then, too, the ophthalmoscope is a very valuable aid in the diagnosis during the primary stage of the disease. If you examine the vessels of the retina with an ophthalmoscope you will find venous stasis of the blood-vessels; they appear tortuous and enlarged; you will find miliary tubercular deposits in the choroid, and later along, in conse-

quence of the progress of the inflammatory changes existing there, you will have a neuro-retinitis.

Another point in the differential diagnosis, apart from the signs we have mentioned, is the slow, insidious onset of the disease. Acute meningitis develops slowly, but tubercular meningitis comes on in a slow, insidious way, the prodromal stage requiring, as a rule, a week or ten days; sometimes even a longer

period than this. Tubercular meningitis rarely ever occurs before the age of 2 years, and rarely occurs after the age of 7. If the child is over 7 or under 2 years, the probabilities are against a tubercular form of the disease.

Its differentiation from gastro-enteritis is made by the boat-shaped appearance of the abdomen, and the presence of the other pathognomonic symptoms here described.

The most perplexing of all diseases, I think, is remittent fever. More mistakes have doubtless been made in the differentiation here than in all the other diseases which it closely resembles. Of course, when we have the head symptoms, the spasms, pain, rise in temperature, etc., together with the pupillary changes, we can easily differentiate the case. But when the three several pathognomonic symptoms are not observed, or observable, then differentiation becomes more difficult. To repeat: the differentiation is to be made mainly by the fact that tubercular meningitis shows a boat-shaped abdomen, and an obstinate constipation. This disease shows a temperature like that of remittent fever, but lacking its regularity. The vomiting in tubercular meningitis differs from that of remittent fever in that it is a vomiting without nausea—indeed, without any evidence whatever of any gastric disturbance; the tongue has little or no fur upon it, whereas the tongue in a case of remittent fever is very foul and thick.

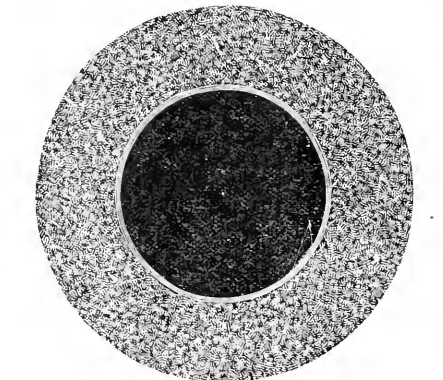


Diagram 3. Pupil dilated.

Errors in differentiation of tubercular meningitis from spurious hydrocephalus may arise; but the history of the later disease, in some cases, makes the diagnosis easy. If the child is young, you have in spuri-

ous hydrocephalus a depressed fontanelle; in the disease under consideration an elevated fontanelle. In spurious hydrocephalus intracranial pressure is low; in tubercular meningitis it is great, and the condition of the fontanelles will enable you to differentiate it.

The prognosis of the disease is very bad. Occasional recoveries take place, but they are exceedingly few and far between. Yet there are cases on record where post-mortem examinations have revealed the fact that death resulted from other causes than those characteristic of tubercular meningitis, especially in the history of a form of insanity to which your attention will be directed later on, which gives us reason to believe that occasionally the disease is recovered from. Many physicians who see the cases of recovery from tubercular meningitis will tell us that we erred in diagnosis; that it was simple meningitis, and not acute.

The duration of the disease is from 16 to 21 days, except in those cases that are ushered in by convulsions. Then, of course, the duration is very short.

The most important element in the treatment is that which is prophylactic, which takes the child from its birth, knowing its tubercular diathesis, and by judicious, hygienic measures overcomes its tendencies. It involves a treatment for the eradication of the tubercular diathesis; fresh air, sunshine, nutritious food, careful attention being paid to elimination, the use of mild alteratives, etc.

In connection with the tubercular diathesis we must necessarily have an exciting cause or causes, and among some of them are the ordinary febrile diseases of children—the exanthemata, for instance—especially measles, which is a fruitful, exciting cause. Children with a tubercular inheritance should be carefully guarded against such affections as ordinary whooping cough, otorrhoea, etc., which are very common among children, and if any one of these diseases should occur, it should be vigorously treated. There is, unfortunately, a notion among the laity, especially the more ignorant class, that discharges from the ear are more wholesome than otherwise, and sometimes such a condition is allowed to go on without attention being paid towards early and prompt treatment. Children should be guarded also against injuries of the head. The majority of cases that have come under our notice have been the results of injuries of the head.

When the disease has once become established, the treatment to day that is regarded by those who have had the largest experience as the most scientific and likely to give better results than anything heretofore proposed, or brought before the profession, and holds out the most encouragement—and it is not worth our while to mention the numerous lines of treatment that have proved inefficient—is the treatment by inunctions of iodoform—iodoform and lanoline or vaseline, about 1 part of iodoform to 5 of the vehicle. Make an application of iodoform inunctions at least twice daily to the scalp, the head being shaved for the purpose, and the scalp being covered with an impermeable cap. We have seen enough of this comparatively modern treatment to know of its

practical value. We have a case now under observation recovering from its use, and know of two or three cases of the fatal form in which life was prolonged very much beyond the ordinary limit by its application. It is the impression now that if the iodoform inunction treatment is used early in tubercular meningitis, the proportion of recoveries will be much larger. To allay the intense motor and sensory disturbances, opium is indicated, and the bromide of potassium. To relieve the congestion of the blood vessels of the head, elimination by the bowels is indicated, and laxatives, diuretics, etc., may be given.

ORIGINAL ARTICLES.

STATE REGULATION OF THE PRACTICE OF MEDICINE—ITS VALUE AND IMPORTANCE.

Read in the Section on State Medicine, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY H. C. MARKHAM, M.D.,

OF INDEPENDENCE, IOWA.

Experience has demonstrated that genuine scientific culture is everywhere productive of a cast of mind averse to abrupt innovation or the acceptance of an unproven principle or theory. This characteristic as existing in the body of the medical profession, has in the past operated adversely to the acceptance of a belief in the principle or practical wisdom of a legal or State regulation of medical practice in any form. While by no means an experiment or a new political expedient—as its potent success abroad fully proves—it receives the aspects referred to when applied to States having the peculiarities of social and political systems possessed by those whose citizens we are.

Irregular and criminal practice has so intrenched itself, and become so closely interwoven in our social fabric, that only the most judicious and united effort, presents any hope for the erection of a legal barrier adequate to the accomplishment of its object, which latter is the protection of the public.

The aggregation and concentration of population is productive of danger to life and health, the removal of which is the unquestioned duty of the State. To those familiar with the subject it is scarcely necessary to state that the history in various of our States of attempts to secure legislation for the regulation of the practice of medicine, presents little other than a long panorama of heroic endeavor and humiliating defeat. For several years a small number of philanthropists from the ranks of scientific medicine have maintained the unequal contest with the hosts of ignorance and charlatanry—while the main body of their professional brethren have with folded arms, and frequently with open criticism, declined to render the assistance upon which success depended. The chief obstacle obstructing a proper view of their duty, and more especially that of the public at large,

is, in its influence, a most serious misconception of the actual object of the legislation in question. Even at the present time it is no uncommon thing to hear from the lips of members of the profession who, in ability and usefulness, are high in rank, the remark that it is only a question of "the survival of the fittest"—that "scientific medicine deserves disgrace and defeat if unable to stand against quackery." This terse expression of the belief of our brethren betrays the inexplicable erroneousness of their idea of the absolute purpose of this legislation. That its object is the furtherance of class and even of school interests, is a misconception of the animus of the champions of this legislation which its opponents have discovered to be their most powerful weapon.

That medical men, by virtue of their calling, are alone competent to measure the evils against which this legislation is aimed, should be its chief promoters, is but commendatory, rather than aspersive, as is alleged, of their championship. The conditions of modern life necessitate the expansion and broadening of the historic self-sacrificing exercise of charity by medicine toward the individual sufficient to include the public. Rightfully or not the latter holds the regular profession responsible for its security against imposition and fraud. State regulation of practice implies the responsibility of the former to institute the method best suited to secure its success. The best light available directs us to that system which invests a Commission or Board to examine, decide, and grant or refuse, as the applicants fitness may determine, a permit to practice. Upon the fitness of the material composing a Board of the kind, much but not all depends. The inadequacy of result may, and will rest in the imperfection of the law under which they act should such imperfection exist. So strongly intrenched is medical error that it can be overcome only by gradual approaches. The danger of failure is lack of patience and caution. All depends upon securing the first advantages. So salutary are the effects of this legislation that public approval attests, but will always await their display.

That guilt makes cowards of medical pretenders found ample verification in the exodus of hordes of this ilk to adjacent States upon the adoption by the State of Illinois of its present medical practice act. Iowa has more recently enjoyed a similar experience. As by a miracle towns awoke to find themselves wholly destitute of medical talent. No better endorsement of the law is possible than the resignation exhibited by citizens under such affliction upon being apprised of the cause. Uniformity of the standard of qualification adopted by the licensing power of the different States, should enable the certificate of any one to be honored by all. A central or interstate commission, chosen by the President, equally from the army and civil ranks of practice will be ultimately required. No more is a department of justice than of medicine demanded in our State and National governments.

To this end the one and all essential prerequisite is the united, earnest and cordial effort of the profession in the various States. The momentum

given by the movement of one should not be lost by the inaction of others. The path is thorny and those we labor to rescue too often chill us by that most cruel of wounds, the impugment of motive, and so slow must our progress prove that only those coming after shall enter the promised land of a redeemed practice. Experience has conclusively shown that at the present time public opinion in some of the States will not permit the suppression of a class of practitioners who, unqualified in various respects, have for a considerable period of time succeeded in concealing the fact from the public. This is more than compensated for in the fact that no difficulty is met in rigorously excluding from State limits all foreign incompetents, and as recently stated by the efficient Secretary of the Iowa Board of State Medical Examiners, who says: "we have put up the bars most effectually, and if nothing more were gained could afford to wait upon the gradual clearing by what might be termed precipitation by death of the somewhat turbid mixture which is now legally recognized as medical practice."

The Christian and moralist outside the medical ranks have yet to be convinced of the vital importance of this legislation to the purity and welfare of our social fabric. Everywhere the success of crime is promoted by insidious and concealed attack. So with feticide and infanticide, and no prophetic vision is needed, especially by those of our calling, to see the effect upon the home and family of these at present unchecked crimes. Beneath the fair white folds of the emblems of the healing art the black flag of the abortionist has always found an easy concealment. To strip the mask from off these interlopers and drive them from the field is required the aid of legislation moulded by those whose knowledge of the situation equips them for the task. The numerical decline of the typical and peerless American family, finds fortunate compensation in the rapid increase of the average duration of the life of its members, and a brilliant triumph of our brethren, with others, in the field of sanitary science, and significant in this connection as having been largely accomplished by their wise invocation of efficient legislation.

Sanitary science, properly a branch of the healing art, at the present is the vine, medical apathy making itself the branch. The same *lusus nature* occurs in several States where our pharmaceutical branch has become not only the vine but the husbandman, having even an alleged disposition to set us down as cumberers of their ground. Through the influence insured by and resulting from compact organization, it is made the dictum of their law that a drug upon the shelf is more dangerous to the public than it is when occupying the interior of the victim of ignorant administration. For saith the law: Thou shalt not sell, but *all* may administer. The term "all" includes, when thus emphasized, our pharmaceutical friends, who appear unsatisfied with the glory resulting from an alliance with that army of conquerors of death and disease whose patented weapons, in glittering array, ornament the shelves of our "legally registered friends." Identity of interest, as that of medicine and pharmacy, admits of legislation in com-

mon, and of such only. Where the organization of each is adequate it would be wise, by delegated committees, to seek a plan for the restoration of the old-time unity of relationship the lack of which, as shown by recent experience, is most detrimental to both. States having as yet no proper medical practice or pharmacy law will, by adopting primarily an offensive and defensive alliance of the two callings, thus uniting their strength and interests, secure escape from many obstacles that otherwise would present themselves.

The success of the new "Practice Act" of Iowa fully equals the anticipations of its promoters, and has in numerous cases secured the approval of those previously doubtful of its wisdom. Before fully operative it induced numbers of those who in public esteem were as deeply rooted in practice as they were towering above other earthly beings, to accept urgent proposals to locate elsewhere. Many others determined to remove the rust of years from the once dazzling surface of their collegiate armor, but invariably selected for such polishing one of the colleges duly accredited by the Examining Board of the State of Iowa. It will be noted here, in passing, that this law necessarily establishes the much-desired scientific standard of medical institutions of learning. It will also lengthen the list of matriculants of meritorious schools and aid in the extinction of the crop of incorporated blotches whose nefarious avocation has made the exhibition or possession of a medical diploma little other, in the eyes of the public at least, than a cheap confidence trick. The number of medical pretenders driven from the State of Iowa since the adoption of the Practice Act, scarcely one year since, cannot, of course, be accurately ascertained—suffice it to state that it is satisfactorily large. The law is, in the nature of things, far from being perfect.

The objectionable but indispensable feature by which a term of practice in one locality entitles such practitioner to a legal status, is less an objection than its *prima facie* appearance indicates. The records of the Iowa Board show that four-fifths of this class of licentiates are certified to as reputable citizens—such being one of the conditions in the application to said Board—by members of the State Medical Society of Iowa. It is also true that prominent and efficient members of the same Society are of the class to which objection is taken. Some of these found themselves able to take but two out of three contemplated courses of lectures. Others were ill at date of college graduation, and thus were minus the degree which, until the present, was dispensed with at little inconvenience.

It is a consideration of practical importance that every licentiate of this class becomes, by virtue of such benefit, a recruit for the further prosecution of the legal extermination of pretenders in medicine. It is found that the first step for the protection of the public against fraud and crime in medical guise is attended by a loud clamor for various school representation upon committees or boards created by the proposed legislation. Recognition of such claims or men is not their endorsement. There can be no true elevation of error, and the history of all successful phil-

anthropic and political methods for the extinction of giant and deep-rooted evils has this one feature of their inception stage, a feature often termed compromise, but which with more truth may be called "rational concession." Those whose duty is the framing or amending the terms of practice legislation can well afford to consider the problem of the execution of the terms of such legislation, when once enacted. Law is never self-enforcing, and but few of us relish the task of the informer and complainant, wherein our own interests play no part other than of the average citizen. It is this rock upon which some of the most dearly purchased and essential systems of legislation have foundered. A violator of the law or medical swindler might be treated in one respect as a nuisance whose existence, as that of an infectious disease or death-exhaling pool, needs only to be made known to the usual health officer of the district, town or city.

As a matter of economy to the State, not to mention that of necessity, the functions of Health and Practice State Boards should be combined. As a material portion of the machinery of a health department is the appointment in every township of a health official, it should be a provision of the practice act that such health officer should, upon being notified, institute proceedings for the arrest and punishment of violators of the law. Finally, whatever little of practical value may characterize the foregoing, it will have realized its purpose if any impetus or increased interest is added to this our new crusade for the expulsion from the sacred precincts of our several States of the vandal desecrators who, in the guise of true disciples of the healing art, would imperil and ruin home, health, and the happiness of our people and—not the least of all—craftily degrade in public esteem the fair fabric of medicine, over whose vestibule are the words: honor, science.

A CASE OF RUPTURE OF THE INTERNAL CAROTID ARTERY WITHIN THE CAVERNOUS SINUS.

Pulsating Exophthalmus; Ligation of the Internal Carotid Artery. Death. Autopsy.

Read in the Section on Ophthalmology and Otology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY CORNELIUS WILLIAMS, M.D.,

OF ST. PAUL, MINN.

This case is one of exceeding interest, not only because of its rarity but because of its intrinsic importance and gravity. The disease is so rare that in the combined experience of a dozen surgeons of a very large practice it might not be met with once; yet when it does occur it is highly important that it should be recognized and properly treated.

The distinguished author of the article on "Pulsating Exophthalmus" in Gräfe and Sämisch's "Handbook," H. Sattler, was only able to collect 106 cases in the literature of the world for a period of more than 70 years. In the table that he constructed a number of cases are included in which the probabilities

are that some other lesion was the disturbing factor, but in the majority of cases he has demonstrated that rupture of the internal carotid within the cavernous sinus was the foundation and origin of the exophthalmus.

In a certain percentage of cases the disease was practically allowed to take its course and resulted in death. This termination, it may be assumed, is the natural outcome of rupture of the internal carotid in this location, when things are left to themselves; or, what is the same thing, when any other treatment save the most radical is adopted. The conditions that govern the result of all surgical operations are, of course, in operation here, and the best directed efforts of the surgeon may fail, as was the case here, through no fault of the surgeon himself.

On February 8, 1887, Dr. J. A. DuBois, of Sauk Center, Minn., sent James Homm, et. 27, to me for treatment. The patient was a man of large frame, good muscular development, had never had any venereal disease, had always been in good health, but by his own confession and from the statement of the physician, he has been a very hard drinker. About Christmas time he was awakened one night by a fit of violent vomiting and retching, which continued almost without interruption from 11 o'clock at night to 2 P.M. the next day. The retching was so violent that it seemed to the patient that every minute must be his last. Very soon afterwards he became conscious of intense pain in the left side of his head and ear, together with a whizzing, whirling noise which was so loud that it seemed strange to him that others did not hear it too. The patient, who lived on a farm near Sauk Center, was not seen by any medical man at the beginning of the attack, and when, after some days, he was seen by Dr. Mc Masters, of Sauk Center, the left eye was protruding, with the lid discolored. The man was drinking heavily, and so continued until I saw him.

February 8, 1887. Left eye markedly prominent, lids puffy and blue, the episcleral vessels enlarged and full, chemosis of conjunctiva, pupil dilated, media clear. Retinal veins enlarged and tortuous, neuroretinitis, no hemorrhages.

V. $\frac{3}{8}$, Em. Right eye, V. $\frac{3}{8}$, Em. Auscultation of the eyeball and side of the head disclosed a loud bruit, continuous, with an accession that was synchronous with the first sound of the heart. The bruit was heard not only over the left side everywhere with great distinctness, but all over the head; with greatest distinctness over the left eye and next over the left temporal region; nothing of interest in the ear. The patient was seen at my request by Dr. Brisbane, Dr. Miller, Dr. Witherle, Dr. Carl Schulin, Dr. Wood, and a number of others, all of whom distinctly heard the bruit and felt the thrill that was appreciable when the ear was held to the temple. All bruit stopped on firm pressure applied over the common carotid. The patient was placed under observation in St. Joseph's Hospital. Some two weeks after his admission there, for the first time I was able to perceive pulsation of the eyeball, which was observed when the eye was examined in profile, and was perceptible to the touch when the eye was

crowded into its socket, or when the finger was forced into the orbit.

About this time, too, a small oblong tumor, somewhat curved in outline, near the size of the little finger of a child, appeared just below the lower lid and toward the inner angle. This tumor pulsated, was easily compressible, and of bluish color, pulsation was not to be felt by the finger.

Four weeks after the entrance of the patient into the hospital Dr. E. J. Abbott, at my request, ligated the left common carotid, in which he was assisted by Dr. Wm. Davis, Dr. Stamm, Dr. Shimonek and others. The ligation was effected without accident and with no unusual damage to the sheath of the artery. A double ligature of catgut was applied, the artery not cut. The temporal pulse on that side ceased immediately, as did the bruit and the thrill, this cessation was complete and permanent. The external wound was closed with silk sutures, after washing with bichloride of mercury solution, 1 to 2,000.

On the tenth day the wound had entirely closed save a small pocket at the lower angle, where there had been a small collection of healthy pus. No bruit or pulsation had returned. Retinal arteries very small, veins still large, neuro-retinitis the same, vision very poor, pupil dilated, chemosis and congestion less, exophthalmus less marked, less discoloration of the lid. The only general symptom of account was an irregular pulse with some fever at the time the abscess formed. The third day after the operation, small doses of whiskey and digitalis were given and these symptoms soon disappeared. On this day, the tenth, the patient got up, dressed and walked around. It is not known just how long he was up, but the sister in charge was summoned hastily and found the man bleeding furiously from the wound and drenched with blood. She with great presence of mind placed her finger in the wound and stopped the bleeding by pressure. Dr. Abbott and myself were summoned by the house surgeon, when Dr. Abbott, assisted by Dr. Renz and Dr. O'Hage, reopened the wound and tied both ends of the artery, which was found to have ulcerated through between the ligatures. No attempt at the formation of a permanent clot could be ascertained, and the artery presented much the appearance of a piece of white rubber tubing. The re-ligation of the artery was attended by immense difficulty because of the swelling and matting together of the tissues, night came on and we had only a lamp to work by. There was no hemorrhage from the proximal end of the artery during the second operation, but when the surgeon came to look for the distal end after ligation of the proximal, the hemorrhage all at once came on and for a little while was terrible.

The patient never recovered from the effects of the hemorrhage. On the third day thereafter he became hemiplegic, and soon afterwards aphasic. This condition continued for a week, when he died. In order to have any post-mortem examination at all it was necessary to make it at once, as the friends of the patients desired to take the body home for burial, and would leave in a few hours. The eye that had protruded was now as much sunken in the socket as

the other. The skull was opened by Drs. Abbott and Shimonek, half an hour after death. There were some evidences of a pachymeningitis over the vertex. The sinuses were well filled with dark fluid blood. The brain was removed and carefully sliced off from above downward. A large portion of the left anterior hemisphere was found to be converted into a soft pulp of about the consistence and appearance of very soft *fromage de brie*; brain otherwise normal. The internal carotid, from its entrance into the cranial cavity, was examined without the discovery of anything abnormal in its gross appearance. It was the intention to have saved it for further examination but, unfortunately, it was included with the brain substance and sent away with the body. The posterior wall of the orbit was chiseled away and the orbital contents carefully examined by myself. Nothing abnormal was found, except perhaps some increase of the adipose tissue. The ophthalmic vein may have been somewhat enlarged, but it was not compared with the vein of the other side. The wound in the neck was covered on its inner surface with a dirty slime, with no appearance of any attempt at repair whatever. The ligature of the distal end of the artery had sloughed off partly, and doubtless, had there been sufficient heart force, the man would have had another hemorrhage.

As unsatisfactory as is the result of this post-mortem examination, it teaches a great deal. The only two pathological conditions which could by any possibility, I think, give rise to the physical condition which existed in this case, are aneurism of the internal carotid within the cranium, or rupture of the internal carotid within the sinus cavernosus. Aneurism of any vessel within the orbit could not give rise to all the symptoms; besides, by continued observation lasting a month I had excluded that condition, which I was anxious to find. Any malignant or other tumor of whatever nature was likewise excluded. As between an aneurism and a rupture of the internal carotid, the chances are always in favor of the existence of a rupture. In proportion to the number of cases observed, and where post-mortem section has been made, the cases of rupture are far more numerous. Aneurism of an intracranial artery is by far less frequent, in general, than rupture. The anatomical difference in the arterial coats here and in other parts of the body may account for it. The lesion of the artery within the sinus constitutes the salvation of the patient; it is the accident of position which determines whether the patient shall die instantly, perhaps, from a hemorrhage into the brain tissue, or whether the peculiar complex of symptoms which constitutes pulsating exophthalmus shall supervene. There is one condition which was present in my case which has been mentioned as also occurring in other cases published: that is, the small pulsating tumor under the lower eyelid. It did not occur to me with equal force at the time, but afterwards it seemed to me that its presence and character may be sufficient to enable us to make a differential diagnosis between aneurism and rupture of the internal carotid.

H. Sattler has reasoned, and I think most correctly, to the effect that the exophthalmus, the tur-

gescence of the veins of the eye and the lid, etc., are all due to an overfilling of the veins from regurgitation of blood from the sinus cavernosus, and he shows how this may readily occur, given a rupture of the artery, with consequent influx of arterial blood into the sinus with each pulsation of the heart. This tumor is simply an exposed vein, enlarged at this point and receiving in its contents an impulse with each influx of arterial blood into the sinus. Now, if there is a rupture of the artery within the sinus, the tumor, when it occurs, will always pulsate, a soft, compressible, pulsating tumor not communicating an impulse to the finger. Such a condition could not result from mere pressure, but must depend upon regurgitation. Only an inflow of arterial blood into the sinus can occasion pulsating regurgitation here.

As to the failure to find the gross appearances of a rupture of the artery at the post-mortem, that does not prove that there had been none. I doubt if an actual lesion of integrity will ever be found where as long a time has elapsed from the making of the operation to the making of the post-mortem section as had been the case here. There is ample time for a tear in the arterial coats to have healed perfectly, if at rest, in apposition, and no interference with nutrition in the immediate vicinity. Only an examination under a lens will disclose the scar there.

In regard to the hæmorrhage, it is impossible to say positively that it would have occurred if the patient had been entirely prudent. It is possible that, if undisturbed, a clot may have formed and organized. Certain it is that the great loss of blood, lowering the general nutrition and acting on the area of brain already much lowered in vitality, assisted in the production of softening from malnutrition and thus brought on the fatal result.

A CASE OF NEPHRECTOMY.

Read before the Chicago Medical Society, Nov. 7, 1887.

BY CHARLES T. PARKES, M.D.

PROFESSOR OF SURGERY, RUSH MEDICAL COLLEGE, ATTENDING SURGEON
TO THE PRESBYTERIAN HOSPITAL, CHICAGO.

Last July I received a communication from a friend out of the city, stating that a patient had come under his charge who had been suffering for two years with cystitis, the diagnosis being based upon pus in the urine.

When I returned from my vacation in September, I found the patient awaiting me at one of the hospitals in the city. Upon examination it was found that a tumor could be easily palpated in the right side of the body beneath the ribs, large enough to extend down to the superior spinous fossa of the ileum, and reaching up to the hypogastric region below the liver. Upon the usual attempts at palpation and percussion, the dullness over the tumor was found to be continuous with the dullness of the liver. But the tumor appeared to me to be so elastic as to present some of the characteristics of a sac containing fluid. So I introduced an aspirator needle into it, and as was expected, found pus. As it presented

none of the usual symptoms of a perinephritic abscess, it was diagnosed to be a case of suppurative disease of the kidney communicating with the bladder through the ureter, the bladder being the outlet of the pus. There was no apparent disease of the bladder itself, other than that which would be present as a consequence of the foreign substance in the bladder.

Obtaining the patient's consent to an operation, an incision was made over the tumor to the outside of the erector spinæ muscle, and it was exposed; then the pockets of pus in the organ were located by the hypodermic syringe. On this occasion, three pockets of considerable size were opened, and drainage tubes introduced. About a pint of matter was let out. It was decided that these three pockets, that were found by introducing the syringe in different places, did not communicate with each other; they were separate cavities, and I think that is the usual condition found in this sort of disease of the kidneys; the pockets are multilocular.

One of them opened freely into the pelvis of the kidney, so that through the incision that was made the finger passed into the pelvis, and water injected into this went into the bladder, showing that there was a direct communication from this cavity of pus to the bladder and urethra. The drainage tubes were left in and the patient improved promptly, losing the fever and symptoms of pus accumulation and retention. For two weeks the improvement continued, then it was noticed that she began to fail rather rapidly and to show signs of fever again; there were signs of septic accumulation, and the tumor began to increase in size, so that from diminishing, perhaps half the size when first examined, it increased one third. As she was failing and the diagnosis was as complete as it was possible to make it, it was decided to perform nephrectomy.

There are some points of importance in the case: The drainage tube that went into the pelvis of the kidney gave free exit to quite a quantity of urine. I think that most of the secretion from that kidney came through the drainage tube; it was sufficient to wet thoroughly in two or three hours a large dressing; this dressing was sufficient to keep the discharge from the wound pure so that there was nowhere decomposition of pus so far as the outward manifestations were concerned. It struck me that if this drainage tube from the diseased kidney gave exit to such an amount of urine, and at the same time there was a good flow of urine from the bladder, it was a fair indication that the other kidney was not diseased, and that success would attend the removal of the diseased kidney, and it was decided to do the operation.

Sixteen days ago the operation was done. The patient was prepared in a certain way that I have followed in reference to all patients upon whom I do what is considered a serious operation, and I think it has a certain influence in preventing shock. Two or three hours before the operation is performed the patient is given gr. v. to x of quinine, and gr. $\frac{1}{2}$ of morphine. This medicine was administered to the patient of whom I am speaking, and the opera-

tion for the removal of the kidney was performed. The whole proceeding from beginning to end occupied an hour, and she went to bed without any manifestation of shock, and with a pulse of 112. She had no rise of temperature until the second day, and then it rose to 100°, subsequent to that it fell to normal and did not rise above normal until the twelfth day, when other symptoms appeared. During all this time the wound was absolutely aseptic. It healed promptly by first intention, so that on the seventh day all stitches were removed; the wound was solid from one end to the other.

There are some points about this operation to which I desire to call your attention, and I will pass the specimen around to show the nature of the trouble. You will see at the lower end a cavity, which was found to contain six or eight ounces of pus; there is another cavity in the interior of the kidney, the pelvis is entirely destroyed and filled up with adventitious material.

Here was an operation to be done upon a moderately sized woman for the removal of a tumor containing pus, a tumor which reached up under the ribs, down to the crest of the ilium, and forward to the anterior spinous process. There was a tumor containing pus in which large pockets had formed—what was the best way to remove it? There is no question in my mind that the best operation, in general, for the removal of the kidneys is the posterior operation. However, there are many diseases for which this operation is done where it is impossible to do it in another way than by the anterior operation, such as cases of cystic degeneration where the tumor is so large that it cannot be extruded posteriorly, but here was a tumor of moderate size, containing pus, in which it was desired above all things to avoid getting into the peritoneal cavity, a tumor which had sacs, the walls of which were in moderate degrees of thickness and strength, but could easily be broken upon pressure.

Therefore, the day before the operation I took a cadaver and experimented upon the lines of incision which would best expose this tumor and give exit to it. I finally decided upon the incisions represented in Figure 1. This represents the patient lying upon the opposite side from the diseased kidney. In these experiments I found that by a certain incision I could get the amplest room without doing injury to the colon or peritoneum; certainly no more likely to injure the colon, the peritoneum or other contents of the abdominal cavity than in an operation for the exposure of any of the large blood vessels of the abdomen.

It is hardly necessary for me to state that there is some little difference between subserous tissue in the lower portion of the abdomen and that of the upper. In the lower portion it is very loose and easily separated, whereas at the upper portion it is quite thin and the peritoneum is more apt to be torn, hence more care should be used in an operation in this position. The commencement of the incision is supposed to be two inches above the anterior superior spine of the ilium. It is carried in a curved direction downwards and backwards to the

last rib. The incision is carried through all the tissues, down to the fascia transversalis, everything is carried forward out of the way, and with the finger the dissection can be made, well behind the tumor; all the parts are separated, then a straight incision is made through all of them, straight back from the first incision and half way between the crest of the ilium and the last rib. The introduction of a ligature at the point of the posterior flap, and pulling aside, there is a wound one can get both hands into, and by exposing the kidney in all its parts, reach the tissues which one wishes to have under control, without difficulty. Figure 2. In this case as soon as the



Figure 1.



Figure 2.

incision was made the tumor presented itself, the finger could be carried around it in all directions so that the kidney with its blood-vessels, ureter, and all could be exposed to view.

I desired to adopt the plan, which is a good one to adopt in all tumors that are difficult to reach, of diminishing the size of the tumor, and attempted to divide it in halves by the cautery, but after a few strokes of the knife I approached a pocket of pus, and gave that up for fear of infecting the wound. I had very little difficulty by taking an eyed probe, threaded with a stout double ligature, in passing the probe through the centre of the pedicle, and then with the double ligature ligating it in halves. The ligatures controlled the circulation perfectly. The vessels in the exposed stump were picked up and ligated one by one as a special security. Drainage was perfect, and the anterior wall of the peritoneum fell easily into place and united by primary intention. At the end of a week there was nothing left of this large cavity but the track of the drainage tube.

This case is an important illustration, it seems to me, of the safety of the posterior incision for tumors of considerable size, where the line of incision is carried out, somewhat in the way here indicated. The saddest part of my report is to come: Four days ago this patient was taken with symptoms of

cerebral trouble and suppression of urine, and she died with all the symptoms of uræmia this afternoon at 1 o'clock, sixteen days after the operation. As yet a satisfactory examination has not been made to determine the condition of the opposite kidney, neither has there been a satisfactory microscopic examination of the tumor. Several sections have been submitted to examination, but none have shown tubercular bacillus.

The post-mortem examination showed a highly congested swollen organ in the remaining kidney, the capillary vessels were ruptured in many places.

LOCAL MASSAGE FOR LOCAL NEURASTHENIA.

Read before the Section for Clinical Medicine, Pathology, and Hygiene, of the Suffolk District Medical Society, November 9, 1887.

BY DOUGLAS GRAHAM, M.D.,

OF BOSTON, MASS.

Neurasthenia, as I understand it, may be either general or local, affecting the nerves or nerve-cells of all, or any part of the cerebro-spinal or sympathetic system. Its manifestations are those of exhaustion or too easy exhaustibility of nerve-force; and its pathology, malnutrition of the nerve-cells, involved with concomitant instability of their circulation in the form of anæmia or hyperæmia, or alternations of these. It predisposes to, it accompanies, it results from disease; the nervous shock and the tedious recovery from injuries point to other sources, and it may be caused by overwork, worry or sheer laziness. The agreeable fatigue after a satisfactory day's work, that insures sound sleep, may be regarded as a healthy form of neurasthenia, if the Hibernianism may be pardoned.

It is a matter of common observation, that those who are compelled to hard manual labor, seldom suffer from nervous prostration; and amongst the more fortunate who may be predisposed to neurasthenia, those who are deeply interested in some hobby or occupation that keeps mind and body active, have found the best means of prophylaxis. The same means that serves for its prevention, also supplies us with a clue to one of the most valuable agents that can be employed for its relief in recovery. Exercise keeps the circulation active, but requires effort of brain, spinal cord and nerves, as well as muscles, at a time when our object may be to afford rest to one or all of these parts of an overtaxed nervous system. Massage supplies this want, and will keep the circulation going with a minimum or no expenditure of nerve-force from the patient, and deep massage without friction will lessen the beats of the heart, and afford it rest also. Nay more, for it is getting to be the fashion not only amongst the laity, but also with some physicians, to say that massage imparts energy to the patient, though I confess I do not exactly understand what this means. Certainly, many who submit to massage feel much more vigorous, light, and supple after even the first application than they did before it. But may not this rather be owing to rousing of their latent energies, and restor-

ing the equilibrium of their forces, by facilitating the circulation of blood, lymph, and the transmission of nerve-force?

I have previously stated elsewhere that in cerebral exhaustion the relative value of massage was almost nil, and that out-of-door exercise was of paramount importance; but I have since found reason to modify this in favor of more massage and less exercise. In such cases, massage of the head alone daily, or every other day, is better than applying it all over the patient, unless there be a rare idiosyncrasy that will not allow the head to be manipulated.

There are people, not a few, who, when using their brains, suffer from uneasy sensations in the lumbar or dorsal region, and these discomforts continue after the cessation of study, causing wakefulness. Generally, there is also some spinal irritation in the region affected. In such cases, massage of the back alone will often induce sound sleep, and, next day, the patient feels inspired with faith, hope, and courage, in place of doubt, dread, and fear of meeting appointments. With these cases, a much more marked effect is produced by local than by general massage, except when the tenderness of the muscles and spinal irritation is extreme, unfitting them for every kind of work, and the massage should be general, omitting the back at the first *séances*, but gradually approaching it at subsequent ones.

In other cases of what may be called local neurasthenia, if the term can be allowed for this purpose, such as writer's cramp, or the cold, small, and feeble muscles resulting from injury, disease, or disuse, massage and exercise, carefully adapted, have given excellent results. To these have recently been added another affection; namely, laryngeal cramp of musicians and speakers, for the local treatment of which electricity and massage are considered the most effectual measures.

It is not the purpose of this paper to go into the details of applying massage, nor to consider its minute effects; but I think it will be a revelation to many to experience either in their own heads, or to observe in those of their patients, the light, comfortable, delightful feelings that are produced by the resistance of a skilled manipulator to forward, backward, and lateral movements of the head. The impression is that the interior of the head has been benefited, and the effect is hardly secondary to massage, which rather gives the impression that the exterior has been improved.

The following cases seem to me sufficiently worthy of notice as examples of the conditions mentioned:

Case 1.—A. J., 23 years of age. Three years prior to my being called to him, he had been running races at college at the same time that the functions of his brain flagged, and study had become so irksome, producing headache and insomnia, that he gave it up for a year. At the end of that time he returned to college for a year, and, to use his own words "patched up and graduated," and for the year before I saw him he had been trying to recuperate by resting at home. At this time, even walking sometimes produced discomfort in his head. At my first visit he had been suffering from headache, with tol-

erably acute pains in the external branches of the fifth pair of nerves, and had but little sleep for four nights. The immediate cause of this had been too much conversation with friends on the evening of a holiday. Massage of twenty minutes to the head alone, in the evening, almost relieved the headache and neuralgic pains, and was followed by an excellent night's sleep. After this massage of the head, with resistive movements to the muscles of the neck, was repeated seventeen times in twenty-four days, and the improvement in sleep, in comfort of the head, and in the power of using his mental faculties was so great, that it became a serious question whether he should not abandon a six months' sea-voyage that he had engaged. Marks of improvement that may be mentioned were, that when he had an occasional wakeful night, he felt no worse on the following day; he had none of his former anxiety in taking charge of his class in Sunday School. He attended a large party late one night without any after-effects, and he walked about freely, and all while he was preparing for an absence from home of six months or a year. Medicine had been laid aside before massage was tried in this case.

Case 2.—Rev. D. L., aged 66 years, has a good appetite and is well nourished, weighing about 180 pounds. For twelve years, he had suffered much from wakefulness. He requires from eight to nine hours of sleep, but seldom got more than five or six hours of broken, unrefreshing slumber. At times he would fall asleep soon after retiring, to wake up in a short time; at others, he would lie awake for hours before getting to sleep. Besides discomfort about the head, he had still more distressing dull ache and uneasy sensations in the lumbar region, aggravated by study or wakefulness.

He found some relief from giving up his ministerial duties ten years before I saw him. He came to me on the 25th of January of this year, and after thirty-five minutes of massage on his head and back at noon-time, he passed the remainder of the day in comfort, and that night and the following had seven hours of sleep each, so that when he came to me on the second day after massage he was hopeful and radiant. Massage was repeated at 11 A.M. on head and back, with increase of comfort to the patient. He did not sleep so well the following night as he did the two preceding nights, but he realized that he was quiet and serene, and felt that he was resting, and next day was refreshed. This day he had a refreshing sleep of an hour and a half in the afternoon, which he never could obtain before when well, and that night slept steadily for seven or eight hours. This patient had massage three times weekly, at or near noon, for seven or eight weeks, and the result of the first week is a fair average of the succeeding weeks: Five good nights of sleep out of six, with a nap of an hour or two in the afternoon; and when wakeful, he felt that he was resting, and, the following day, was not miserable from loss of sleep, as before massage; vigor of body and mind gradually increased, and he could take part in lectures, socials, and other evening entertainments without loss of sleep, as formerly. Mild tonics and stimulants

always made this patient worse. An epiphora that had troubled him for many years disappeared under massage of the eyelids.

Case 3.—Mr. E. B., 35 years of age, had been in good health for several years, and attended to his business, which involved great detail, from 9 A.M. to 6 P.M., with an hour off at noon for lunch. He had remained in the city all the previous summer, and felt very well when he went away for a vacation of several weeks to Colorado, returning on November 20. From the time of his return he began to suffer from headache, which caused him to be out of his office several hours daily; and, by the end of three weeks, this became suddenly so much worse that he was obliged to leave his office altogether. There was a slight elevation of temperature, but still he had a good appetite, and slept well. I gave him massage of the head on three successive days, and the headache was relieved only while the head was being manipulated, and for a short time afterwards. When massage was being done on the right side of the head, the ache would disappear and increase on the left side; and, on doing both sides they were relieved, and the ache increased in the back of the head; and on *masséant* the back of the head, the discomfort would disappear from there and increase in the forehead, and, on manipulating this region, it would disappear altogether for a time. In other cases, I have chased pain in this way all over the patients without being able to dislodge it completely, only temporary relief being afforded at the place of application.

Case 4. will serve to show still farther that it is not always well for those who are inclined to nervous exhaustion to give up their employment when working easily, and go away on a vacation. Miss M. P., 34 years of age, teacher in a High School, had been subject to headaches all her life. Her parents had highly nervous temperaments. One year before I first saw her, the headache had been so severe that she was confined to her bed for seven days with pains all over her, and elevated temperature, and since then, the headaches have been more frequent and more severe than before, and usually accompanied with nausea and vomiting. Evidently the case was one of migraine. The ache was on the left side of the head, in the left eye, and more especially over the left temporo-parietal region, accompanied with a crawling sensation at the back of the head, and soreness of the muscles of the back of the neck. The left side of the face was smaller than the right. She had great weariness and weakness in her arms, so that it tired her even to raise them. In the cervical and upper dorsal region, there was much tenderness on pressure over the spinous processes. Her appetite was good, bowels regular, and she slept well. Notwithstanding the increase in frequency and severity of headaches for a year, she had gained in weight, mainly adipose, so that she weighed 160 pounds, her ordinary weight being 123 pounds. She continued her duties as a teacher, and found that she felt better when occupied in this way than when not feeling compelled to do anything. Saturdays and Sundays were her poorest days, and a vacation

of two months in the South ten months before she came to me was of no apparent benefit to her, but, she thought, made it all the harder for her to begin her professional duties again. Correcting examination-papers fatigued her more than anything else. She could walk three or four miles with ease.

The first massage of thirty minutes on the head alone left this region "perfectly comfortable" until the second massage was repeated, two days later, when this comfort was extended to the manipulated regions—head, neck, arms, and shoulders—and a burning sensation between the shoulders was also relieved. In four weeks, a continual wooden, numb sensation of the left side of the head was not only relieved temporarily, but did not return; and, corresponding objectively to this, her tough, indurated scalp had become soft and supple. Sixteen days after she came to me she could not stand, and had an account of weak and uneasy sensations in the back of her neck, as if her head would drop backwards when she attempted to hold the book, but she could sit and read with ease. This was at the catamenial period, when she was generally worse in every way. But, two days later, she was much surprised to find that she had recuperated more quickly, and to a greater extent, than ever before. This patient had massage twenty-five times in ten weeks, with increasing improvement, and this continued after treatment was omitted, so that she was practically well—sufficiently well to enjoy her summer vacation, which helped to confirm the benefit previously received. Six months later, she reported that she had continued quite well. The following spring her troubles returned in the same way, but less severely than formerly. They were speedily removed by massage, and stayed away for a year, when, again, there was a slight relapse, and more speedy recovery under massage. At times, she had found *nux vomica* more beneficial than any other internal remedy, but even this had lost its effect before massage was tried.

Case 5.—Mr. J. B., aged 33 years, has always been a nervous man. He often felt fatigue in the lumbar region, but this he regarded as a matter of course, and he was always capable at business until six years before I first saw him. At that time he was in an elevator which was being tested against sudden falling by means of some "sure patent preventive." The experiment failed, and the elevator fell eighty feet with six men in it. While descending, our patient sat as tailors do, hoping thereby to diminish the shock of stopping. He got out apparently none the worse, walked four squares to his newspaper office, for he was then an editor, and dictated an account of the accident. He stayed at home for five or six weeks, but was not confined to bed. After this he resumed his duties, but it was eight months before he could walk a mile. For a long time in the evening, the region of the spine was painful, but relief was often found by pouring cold water upon it; at other times, from very warm water. During vacation he was perfectly well, and played lawn tennis. For three weeks before I saw him he had suffered from pain in his back and legs, and could walk but

a very short distance at a time. Conversation and reading quickly tired him, and part of either would escape his attention. A few hours at business would cause nausea and headache, and make him feel generally used up. Appetite, bowels, and sleep normal.

At my first interview there was much tenderness on pressure over the spinous processes and muscles of the back; but, after three massages in nine days, they could be manipulated quite vigorously. After six massages in eighteen days, he was practically as well as ever. Manipulation was exceedingly agreeable to this patient, and, while it was being done on either leg or hip, the agreeable sensation was felt in the back and in the other leg and hip, as well as at the seat of application. About once a year, usually in the fall, after his vacation, this patient finds himself used up, as just described, and he has learned by experience to rely on the prompt relief afforded by massage. He has also found wine of coca of some use. I have frequently made similar cases worse by using massage too vigorously to begin with.

Case 6.—When Mrs. M. W. came to me in October, 1884, she was 58 years of age, and weighed 213½ pounds. Her adipose tissue was supple and of good consistency. She had then been suffering for three years from a continual, distressing feeling of weakness in the right leg and thigh, which first made its appearance when there was some enlargement of the internal saphenous vein, but this had long ago disappeared. On examination, the whole limb seemed normal in every respect. The patient was not at all of a nervous, hysterical, or imaginative temperament, having been at the bombardment of Fort Sumpter, once in a steamboat explosion, and once made a long voyage in a vessel with the cargo shifted, so that there was imminent danger of the vessel upsetting, besides having travelled twice around the world.

A walk of a square was as far as the patient could go with comfort, and a walk of one fourth of a mile caused great fatigue and increased the feeling of weakness. She had tried absolute rest for one, two, and three months at a time, during which she lost flesh, but the limb did not improve. At my request, she omitted potatoes, sugar and butter from her diet and began walking for two minutes every hour during the day, which was increased daily one minute every hour. Massage was given to the leg, thigh, and hip three times weekly. The first time it comforted and rested the limb, and after this passive and resistive movements were also given, which at first tired the limb, but this was at once counteracted by manipulations. At the end of two weeks she could walk half a mile without fatigue—twice as far as she could before with great fatigue—and a distressing pain that previously came after slight exertion at the exit of the sciatic nerve had not been felt for a week. At the expiration of four weeks the patient walked a mile and a half with ease, feeling but slight general fatigue thereafter, and the limb that had been weak was not so tired as the other. It was by her own wish that massage was repeated occasionally for a few weeks longer, and she has continued well ever since. Under the restricted diet she lost 7½ pounds, and no doubt but this aided her recovery.

Case 7.—Miss E. H. was 39 years of age when I attended her in the winter of 1883-84. She is irregularly astigmatic, and suffers from headache, and this is worse at the menstrual period, which recurs every three weeks and a half, accompanied with pain. She suffers much at times from indigestion. She is a lady with a strong mind, a clear intellect, an unwearied conversationalist, and, in the language of her physician, who sent her to me, "she is a preëminently hyperæsthetic subject, and would be hysterical, did not the brain govern the *cerebrum abdominale*." For five years she has suffered with a pain in her right knee, impairing locomotion, and the latter part of this time there was pain also in the outer and posterior aspects of the thigh, where the muscles were considerably atrophied—so much so that her other discomforts seemed small in comparison with those of the limb. The trouble in the limb came when she was run down from nursing a sick relative, and coincident with this a severe cough that had been increasing every winter disappeared, and did not return. During these five years under rest, with and without fixed dressings, changes to country and seashore, the use of tonics and sedatives internally and blisters externally, there would be sometimes a little improvement in the knee, but always followed by speedy relapse on slight or no provocation, such as accidentally hitting it against something, or being obliged to use it a little more than usual. At times the pain was relieved by walking, at others made worse. It was aggravated by cold weather and by riding in a carriage.

Examination showed that the affected limb was much smaller than the other, the skin cold and dry, the muscles atrophied, but there was nothing especially noticeable about the knee, save slight puffiness and great tenderness on pressure upon the internal condyle, not in the skin. Owing to pain and weakness, which were aggravated by walking, she could take but a few steps when massage was begun, and the only symptom then in her favor was steady sleep. Massage was applied three times a week for eleven weeks and a half, being omitted for a few days at one time on account of unusual pain in back, stomach and intestines. For the first four weeks, massage, with gradually increasing exercises, was confined to the affected limb, with the result that she was at the end of this time taking four walks daily of ten minutes each, besides exercises of standing on tip toe, stepping up two steps at once, holding the limb out extended, and elevating it sideways when lying down. From the first the skin became warmer, softer and suppler, and the muscles fuller, as shown by an increase of one-half inch around the calf; one-fourth inch at the knee; one-eighth inch three inches above the patella; and one-fourth inch seven inches above the patella. When treatment was discontinued these gains were one-half inch, five-eighths, three-eighths, and seven-sixteenths, respectively. But at the end of four weeks the pain was still about the same, notwithstanding the improvement in locomotion, nor had it entirely disappeared when massage was given up.

As soon as she made known the heart and abdominal troubles, massage was applied for ten minutes to each of these regions also, which was during the last

seven weeks of treatment. Headache was improved, sleep became more refreshing, digestion easier. During the last eight or ten days of treatment, it became evident that, though the patient was much better, and could go about much more freely on foot and in a carriage, she had come to a stand-still, and consequently the treatment was terminated rather sooner than she wished. A year later I saw her and she was the picture of health. Her appetite was enormous and digestion good. She had gained many pounds in weight and could walk freely, but still suffered from headache. She considered, and I think rightly, that massage had given her a start, and improvement had continued since it was omitted, for no other treatment had been used.

Amongst people who may be considered perfectly well, there are few, if any, who have not some weak points. When fatigued or worried I suffer from tension and dull ache throughout my whole right side. In September, 1884, when in Paris, I had one man give me half-an-hour's massage on my right side only, at 2 P.M., and another half-an-hour's massage on same side at 5 P.M. The manipulation was slight, superficial and rapid and at the time of its being done seemed very ineffectual. But that night I never slept so sound in a railroad train in all my life, as I did from Paris to Calais, and while crossing the channel I was not even sick. Two days later I played deck quito's all one afternoon when the thermometer was 80° in the shade and the ship rolling. Next morning my playmates could scarcely get out of their berths, they were so stiff and tired, and so was I, but the fatigue was all confined to my left side and not to the right as formerly.

It may be said that these were not very sick people, but they are cases that prove troublesome to physicians, and they were certainly in conditions which any one of us would gladly be freed from. It is not necessary that I should dwell upon extreme cases of nervous prostration that have been treated by absolute rest, forced feeding, massage and electricity. I could give further details of the other mentioned cases and also of similar ones which would seem to justify the following conclusions:

1. That massage induces sleep.
2. That even when massage is applied in the forenoon its soporific effects may not disappear before bedtime; though in general the later in the day massage is used, for promoting sleep the better.
3. Disagreeable feelings of drowsiness and languor do not necessarily intervene between massage in the forenoon and sound sleep at bedtime. Aptitude for rest or work generally follows massage.
4. When people are wakeful after massage they may not be restless nor feel the loss of sleep on the following day.
5. Spinal irritation is relieved or disappears under massage.
6. For local neurasthenia there is no need of general massage, unless the whole system be secondarily influenced.
7. When affections have come to a stand-still under massage, improvement may yet go on after massage has been discontinued.

8. For improving the nutrition of nerves and muscles, restoring natural sensation and motion, massage may succeed when other means have failed.

9. Deep massage without friction has proved of more value in my hands than all other forms of massage put together, in the cases herein considered.

10. Massage can be overdone, producing opposite effects from a moderate application.

11. Besides massage, carefully graded exercises at regular times, are valuable accessories in the restoration of motion.

12. Massage is not the only means of treatment for neurasthenia. Its selection is usually decided upon after the failure or exhaustion of every other means; in the same manner that the shrewd old divine decided that it was not wise to let the devil have all the good times to himself.

MEDICAL PROGRESS.

NERVOUS ORIGIN OF RHEUMATOID ARTHRITIS.—

At the meeting of the Royal Medical and Chirurgical Society, on November 22, DR. ARCHIBALD E. GARROD read a paper on this subject, of which the following is an abstract: Some of the arguments which have been put forward in support of the view that rheumatoid arthritis is a disease of nervous origin, are examined in the light of a large number of cases. The statistics given are based upon a series of 500 cases. Arguments are adduced in support of the following propositions: 1. That the causes of rheumatoid arthritis are such as might be expected to act upon the central nervous system. 2. That the distribution of the lesions is such as would be likely to result from nervous lesions. 3. That the distribution of the lesions is similar to that of certain atrophies of spinal origin. The influence of heredity is first discussed. In 216 cases out of 500, there was a family history of joint disease, sometimes of more than one variety. There was a history of gout in 86, of probable gout in 10, of rheumatism in 64, and of other conditions which may be classed together as probably rheumatoid arthritis in 84. These figures can only approximate to accuracy as they are based upon information given by the patients. The influence of uterine causes is next discussed, and it is shown that when the female cases are arranged according to the age of the patients when the disease commenced, there is a steady increase in numbers up to the period of the menopause and a steady decrease after that period. Amongst the male cases there is no such regularity. Of the 500 patients 411 were women, and only 89 men. The influence of anxiety and care, mental shock, injuries, damp, cold, and previous rheumatic attacks, are discussed, and each of these is shown to have a share in the causation of the disease. Stress is laid upon the extreme symmetry of the joint lesions in rheumatoid arthritis, and some examples are adduced. Reasons are given for believing that there is a tendency for the

joint lesions to advance up the limbs from the periphery towards the trunk. This order of invasion is by no means constant, but in particular instances it is well marked. In the localized form of the disease, it is, of course, absent. The knees rank only second to the hands in liability to rheumatoid arthritis. Lastly, it is shown that there is a close resemblance between the distribution of the joint lesions in rheumatoid arthritis and in the recorded cases of arthritis following spinal concussion, whereas in more local spinal injuries one or more large joints are usually affected, as in tabes dorsalis. The associated nervous phenomena, such as muscular wasting, increase of tendon reflexes, etc., are regarded as secondary to the joint lesions, and as therefore lending no efficient support to the theory of the nervous origin of rheumatoid arthritis. SIR DYCE DUCKWORTH agreed with the views expressed in the paper. The morbid anatomy of this disease required very much more investigation than had at present been given. DR. ORD had been interested in this subject for many years. The joint troubles were to be regarded rather as symptoms than as the whole disease. He came to the conclusion that nervous influences had a great deal to do in the causation of this disease. He believed that nervous influence was reflected from the uterine organs to the spinal cord and on to the joints. The cord also exerted a primary influence. Injury might lead to a joint affection, and then the nervous system tended to propagate the joint change to other joints. He compared rheumatoid arthritis to progressive muscular atrophy. In a case of chronic cervical pachymeningitis there was much muscular and cutaneous wasting, and later a remarkable degree of chronic osteo-arthritis developed. In another case of spinal injury joint trouble followed at a long interval the muscular wasting. DR. BUZZARD said that in association with Charcot's disease of the joints there was a much clearer evidence of disease in the central nervous system than was the case in rheumatoid arthritis. He alluded to the various crises and paroxysmal secretions occurring in tabes dorsalis as evidence of the involvement of the central nervous in most cases. Eight years ago he promulgated the theory of a joint centre in the medulla oblongata, and he brought forward arguments to show that acute rheumatism might be an acute affection of the medulla oblongata. DR. HERRINGHAM alluded to the belief which he shared that cold and damp were very potent causes of rheumatism and rheumatoid arthritis. DR. GARROD, in reply, said that he should have classed Dr. Ord's case of myotrophy as one in which the arthropathy was due to definite nervous lesions, and therefore not of the same category as rheumatoid arthritis.—*Lancet*, NOV. 26, 1887.

PLASTIC SURGERY.—MR. C. B. KEETLEY says: It will be granted that all parts of the body are susceptible to septic inoculation, therefore one of the first rules of plastic surgery should be: *Thoroughly disinfect the parts to be operated on, the hands of surgeon, assistant and nurse, the instrument, sponges, ligatures, sutures and dressings.*

As a preliminary to the use of such germicides as sublimate and carbolic acid, a prolonged washing and scrubbing with the liquid potash soap of Dr. Duncan, of St. Petersburg, is very useful. This soap has two excellent properties, 1, it is an extraordinary powerful solvent of dirt; 2, it is itself instantly soluble in cold hard water or antiseptic lotions, so that it may be said to promptly "do its business and go about its business." But, bearing in mind that in plastic surgery, one almost always desires union by first intention, and that irritants such as the stronger germicides are not favorable to that, *an ideal plastic operation should be aseptic rather than antiseptic.* For this reason I generally, while keeping the instruments in a tray of carbolic, dip them into a basin of recently boiled, not boiling water before touching the patient with them. But when they are even temporarily laid down again, it should be either into the tray or upon a damp carbolized towel, disposed around or near the site of the operation. The same recently boiled, not boiling, water is used as a douche and for the sponges. Some persons would prefer boracic lotion. I greatly doubt whether it has, for these purposes, any advantage over the boiled water. If the operation were to occupy days instead of say half an hour, it would be a different matter.

With regard to ligatures, they should scarcely ever be used in a plastic operation. Temporary pressure with sponge or forceps almost always suffices to check hemorrhage. The boiled water used at a temperature of about 120° will assist. Hair-pin or silver sutures can be often arranged to not only adjust the parts but also at the same time to control an obstinate vessel. The objections are manifest to a number of catgut knots in a wound where perfect antiseptics is impossible. I believe it may be laid down as an axiom applicable to surgery in general that *even with the aid of antiseptics, the difficulty of obtaining union in a wound without suppurative increases geometrically with the length of time a foreign body is left unabsorbed in the wound.* I may not be expressing it properly, but I mean that when, in a simple osteotomy, even though it be done antiseptically, a large splinter of bone be chipped off and left *in situ*, suppurative is ten times more likely than if no such splinter had been made. Very probably it is the case that, even with carefully applied antiseptics, a few germs find their way alive into the wound, but their chance of surviving and multiplying depends mainly upon their finding or not finding some dead or half dead organic nidus to receive them. It is particularly desirable to keep catgut out of wounds when complete antiseptics is often impossible.

As a prophylactic against tedious and troublesome hemorrhage the preference of scissors to the knife for the division of all structures except occasionally the skin itself, is to be strongly urged. With regard to the skin, in dividing it the precision attained with a sharp scalpel recommends the latter.—*Annals of Surgery*, August, 1887.

THYMOL IN DIABETES MELLITUS.—In the recently established therapeutic clinic of the University of Siena, PROFESSOR BUFALINI has thoroughly studied

the action of thymol in two cases of diabetes, the object of his investigation being twofold. He first endeavored to ascertain the effect of thymol upon the excretion of sugar and, secondly, whether its well-known power as an intestinal disinfectant would exert a favorable influence upon the condition known as acetonæmia.

To determine the former question, the patients were first placed upon a mixed diet of soup, meat, eggs, bread, coffee, milk and wine, the amount of each being given by weight. The quantity of feces and urine, the density of the latter and its percentage of sugar were also ascertained, as well as the bodily weight in one case, the other being too feeble to be moved. After from a week to ten days of such observations, thymol was given in doses of 30 to 45 grains per diem and continued long enough (to the two cases 12½ drachms were given in eighteen days) to demonstrate that, while the patient is on a mixed diet, this substance exerts no appreciable effect upon the quantity of urine, its specific gravity, or its percentage of sugar.

When the patient is on an exclusively proteid diet, the case is different and requires some explanation. It is a common observation that as soon as a diabetic is placed upon an albuminoid diet, the sugar in his urine will diminish, perhaps entirely disappear. A persistence in this regimen is, however, apt to be followed by digestive disturbances, with abnormal intestinal putrefaction, and a speedy reappearance of the absent, or increase of the diminished sugar. This occurred in one of Bufalini's cases. Under a proteid diet continued for one month, the sugar had entirely disappeared. Continuing the same diet, gastro-intestinal disturbances (anorexia, vomiting, borborygmi, diarrhea) set in and were soon followed by a reappearance and steady increase of the sugar. At this juncture it occurred to Bufalini to administer thymol, he believing with his colleague, Martini, and with the writer of this article, that it is the best known intestinal antiseptic. The result was immediately favorable, and the conclusion with reference to the drug is that it is not only useful, but necessary, in cases of diabetes placed upon an exclusively proteid diet. No deleterious effects from the use of thymol were observed by Bufalini, and none need be apprehended, although, in the writer's experience, smaller doses (from 5ss to 3j) are quite efficient in abnormal conditions of intestinal putrefaction.

The second object of Bufalini's research was to test the effect of thymol upon the condition known as acetonæmia. Both of these patients presented all the symptoms of this condition. They were somnolent, greatly prostrated, and they exhaled the odor, and their urine gave the reactions of this substance. Under the use of thymol, the characteristic odor of the breath diminished and the reactions of acetone in the urine became faint, while the general condition improved. Bufalini holds that these results of the thymol treatment establish the fact that acetone is formed in the intestine by abnormal fermentation of the sugar excreted by this channel, and that the ferment is an altered gastro-intestinal mucus.—*Med. News*, December 3, 1887.

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MEDICAL LEGISLATION.

In continuing the discussion of this subject from page 815 of THE JOURNAL for December 24, 1887, we cannot express more concisely our views regarding the proper standard of medical education that should be required for a license to practice medicine, than by quoting the third section of the law now in force in Minnesota, with the interpolation or addition of two or three lines enclosed in brackets, as follows: "Sec. 3. All persons hereafter commencing the practice of medicine and surgery in any of its branches in this State, shall apply to said Board for a license so to do, and such applicant, at the time and place designated by said Board, or at a regular meeting of said Board, shall submit to an examination in the following branches, to-wit: Anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventive medicine, practice of medicine, surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence, and such other branches as the Board may deem advisable; and present evidence [of having studied medicine three years, including] attendance on three courses of lectures of at least six months each, [and two courses of clinical instruction in a general hospital containing an average of not less than fifty patients]; said Board shall cause such examination to be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery. When desirable said examination shall be conducted in the presence of the Dean of any medical school or the President of any medical society

of this State. After examination said Board shall grant a license to such applicant to practice medicine and surgery in the State of Minnesota, which said license can only be granted by the consent of not less than seven [of the nine] members of said Board, and which said license shall be signed by the President and Secretary of said Board and attested by the seal thereof. The fee for such examination shall be the sum of \$10. and shall be paid by the applicant to the Treasurer of said Board, to be applied by said Board towards defraying the expenses thereof—and such Board may refuse or revoke a license for unprofessional, dishonorable or immoral conduct."

With such a standard of preliminary general education for the medical student as we suggested in THE JOURNAL of December 24, 1887, and the foregoing section of the Minnesota law with the amendments in brackets, enforced by a competent and impartial State Board of Examiners, in each State, there would speedily follow a marked improvement in the educational status of the profession, and a corresponding diminution in the number of both medical students and medical schools. But the actual permanent benefits to be obtained from the creation of such legal standards of education for the medical profession will depend very much upon the competency and faithfulness of the several State Examining Boards. Consequently the questions, by whom shall such Boards be appointed, what shall be the qualifications necessary to render any person eligible for appointment on such Boards, and to whom shall the members of such Boards be responsible for the proper performance of their official duties? present more difficulties in arriving at satisfactory answers than in adjusting any other details connected with medical legislation. We will therefore reserve a more full discussion of these questions until next week.

THE NEXT MEETING OF THE ASSOCIATION.

Four short months intervene between the present and the time for the next meeting of the American Medical Association. While the steady growth of the Association promises success for its future, the necessity is as imperative as ever that the officers and members should cooperate each year to make the annual meetings as successful as is possible from a scientific standpoint, and as harmonious and pleasurable as possible from a social standpoint.

The number of papers has greatly increased during the last few years, and especially since THE JOURNAL was founded. In many Sections more are

offered than can be read. While, therefore, there is no dearth of material, experience has demonstrated that the value of the papers presented to the Sections depends chiefly upon the thoroughness with which their officers canvass the best authors and observers for contributions.

Since the number of papers are annually increasing all that contemplate presenting contributions should study to make them concise and to the point. The following rule of the Association must be borne in mind: "No paper shall be read before either of the Sections, the reading of which occupies more than twenty minutes." Longer papers may be read in abstract. It must also be remembered that "it shall be the duty of any member of the Association who proposes to present a paper or report to any one of the Sections to forward either the paper or a title indicative of its contents and its length to the Chairman of the Committee of Arrangements at least one month before the annual meeting at which the paper or report is to be read." And further: "It shall be the duty of the Chairman and Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their possession."

Regard for these rules is necessary in order to give the Chairman of the Committee of Arrangements time to prepare the annual programme, to arrange the order in which papers are to be read, and to have the programmes printed for distribution at the beginning of the meeting. In times past papers have been crowded upon the programme during the month preceding the meeting, but many are annually disappointed because they send their papers too late.

The next meeting will be held in Cincinnati, and will begin on the second Tuesday of May. We can safely prophesy an unusually large and successful meeting, for the central location of Cincinnati will make it easy of access from all directions. The city itself offers many attractions to strangers and the Committee of Arrangements, with its able Chairman, Dr. W. W. Dawson, of that city, will make every possible arrangement for the comfort and pleasure of the members in attendance.

We would also call attention to the following rule of the Association regarding papers to be read in the Sections:

Resolved, That the several Sections of this Association be requested, in the future, to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three

following heads, viz.: 1st. Such as may contain and establish positively new facts, modes of practice, or principles of real value. 2d. Such as may contain the results of well-devised, original experimental researches. 3d. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance. (*Transactions*, Vol. 16, p. 40.)

Members are also requested to note the fact that the Committee of Publication is vested with discretionary power in the preparation and publication of the matter referred to it by the Sections for publication.

ELECTRICAL RESISTANCE IN THE HUMAN BODY UNDER PATHOLOGICAL CONDITIONS.

That the body offers considerable resistance to the passage of electrical currents is well known. And that much variation in this resistance exists in different individuals, and even in the same person at different times, was long ago demonstrated. This variability is known to be due in part to the use of currents of different strength, of electrodes of different sizes, to variations in the moisture or dryness of the skin, to the thickness of the skin, to the distance apart of the electrodes, etc. In making comparisons of the resistance in many persons much care must be taken to eliminate these various sources of error.

Very few observations upon persons in a pathological condition made with accuracy have been recorded. A year ago Charcot called attention to the fact that electrical resistance in the body was constantly lessened in Grave's disease and in certain cardiac affections, notably asystolism, (*Gaz. des Hôpitaux*, 13-15, 1886). These observations of Charcot have led R. NORRIS WOLFENDEN (*The Practitioner*, December, 1887) to make most careful investigations of the same kind upon Grave's disease and less extensively upon others. To eliminate sources of error he used uniformly the same electrodes, placed upon the same part of the body in each case, *i. e.*, on the nape of the neck and on the top of the sternum. He tested with the resistance coil his current so that he had one of uniform measured strength. In this way he tested the resistance in fifty healthy persons and found it between 4000 and 5000 ohms with a current of 15 volts. In eighteen cases of undoubted Grave's disease he found this resistance to vary between 500 and 1500 ohms. In eight of these it was 1000 or less. This fully corroborates Charcot's observations. In ordinary goitre the resistance is not lessened, but was found to vary between 5000 and 6000 ohms.

In one case of malignant disease of the thyroid it was found to be 8000. In some cases of hemiplegia it varied from 1300 to 4000; in the same number of cases of epilepsy from 1000 to 4000; in three cases of cerebral softening it was 3000; in two cases of paraplegia it averaged 3000; in one case of general paralysis 6500; in one case of infantile paralysis 2600; in a case of hystero-epilepsy 1600 ohms, and in one case of chorea in an adult it was 350. Dr. Wolfenden further noticed that a current of only two or three volts would in Grave's disease produce marked deflection of the galvanometer-needle, with such a current no deflection would occur in health. The bodily resistance is therefore almost nothing in this disease. Dr. Wolfenden can offer no explanation of these changes.

FOOD ADULTERATION IN ENGLAND.—MR. C. E. CASSAL, the public analyst for Kensington, reports that of 499 samples analyzed under the "Food and Drugs Act" 28 per cent. were adulterated, and 17 per cent. of inferior quality, the greater part of the adulterated or inferior samples being specimens of milk. The largest proportion of adulterated samples was from the Sunday milk, only 34 per cent. of the samples being genuine. The amount of fines for all this adulteration was only £37, knowing which one does not wonder at the extent of the adulterations.

J. K. BARTLETT, M.D., long well known to the profession as one of the oldest and most respected members of the profession in Milwaukee, Wis., has removed from that city, and taken his residence permanently in Berkeley, Cal. His many friends and correspondents should make note of this fact. The change of residence at this period of life was caused by the hope of benefiting the health of his family.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, November 9, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. DEFOREST WILLARD read a paper on
FOREIGN BODIES IN THE URETHRA AND BLADDER.
REMOVAL BY LITHOLAPAXY EVACUATOR WITH
LARGE, STRAIGHT, OPEN-ENDED
CANULA.

Unfortunately for the safe extraction of these bodies, the surgeon has to meet with a large amount

of deception upon the part of the patient, when the object has been self-introduced, and it is often impossible to obtain any reliable information either as to the presence of the foreign mass or as to its conformation. In broken bougies the surgeon should, if possible, have the other remaining fragment in his hand for measurement, or else secure one of similar size. Any object of peculiar shape should be accurately described, or duplicated. It must be remembered, that while a patient may confess to the introduction of but one body, there may be several. The position in the canal must be thoroughly fixed. In the ante-scrotal region this is easily accomplished, and with the aid of a sound and a finger introduced into the rectum even the posterior urethra can be well examined, provided inflammation be not too severe. When possible, no manipulations should be attempted for extraction without the body being firmly secured from further recedence. Ether is of the greatest value, but cocaine injections may answer for urethral work.

Treatment.—About one-tenth of inserted foreign bodies will be spontaneously expelled, but when the *vis a tergo* of the urine fails to wash out either a calculus or an object inserted through the meatus, the safest and surest plan is to attach to an ordinary litholapaxy evacuator (Bigelow's or other improved pattern) a large, straight tube, which is open at both ends. It contains a movable stylet for ease of introduction. The size should be the largest that the urethra will possibly admit (after nicking the meatus, if necessary), say French No. 29 or 30; American, No 19; English, No 16, for adults; children in proportion. The possibility of the passage of the body through the tube should be determined, if possible, by actual trial, provided a similar piece can be obtained. Rarely will any bougie larger than the above-named size be found in the bladder or urethra. The method has been so satisfactory in my hands, as is proven by the collection of objects before you, that I always resort to it with confidence, to the exclusion of all other primary devices.

If lodgement has occurred in the urethra, the canal must be firmly closed by finger pressure behind the object, while the metallic tube is slid down and carefully caused to engage the catheter or other mass within its calibre, when the bulb of the instrument is slowly compressed until the water has distended the urethra to its fullest limit, thus liberating the body, when suction is suddenly applied while the penis is stretched forward. Unless the mass be firmly caught and imbedded in a pocket, this manoeuvre rarely fails after a few trials. The quantity of water that can be contained in the urethra is so small that the body may require two or three efforts to withdraw it the whole length of the instrument. The water should be injected very slowly, but the suction current must be made forcibly. Inspection of the rubber tube can be made through the upper opening without detachment of the catheter. Avoid employing forceps until unsuccessful with the above method, but when necessary to be used, the superiority of the canula again asserts itself. The forceps can be manipulated through its

calibre, and if the object be compressible enough to pass the bore, withdrawal can be accomplished without the slightest injury to the mucous membrane. Objects of larger size than this tube can seldom be withdrawn with safety by any method save cutting. Hairpins can be compressed through the walls of the urethra, and their points passed into the calibre, when they can be completely pushed within the bore and easily withdrawn. Beads, peas, pebbles, etc., will easily enter the canula by suction. Catheters, wires, etc., will usually require the assistance of forceps. Barbed heads of grain can also be ensheathed and withdrawn by this device.

If the object has passed into the bladder, the evacuator becomes an even more essential aid. A straight instrument is not always easy of introduction, but the security gained against subsequent urethral injury abundantly repays for the trouble. If a flexible or spirally cut obturator is used, the introduction is rendered much easier. The tube is used first as a sound to discover the offending body, when the bulb of the evacuator is first slowly compressed, so as not to disturb the fragment. Suction should always be made quickly, so as to draw the body with force. Failing, the water is next ejected with more energy, so as to move the fragment into better line with the calibre, suction being again rapidly applied. If the body is rounded, and of size that can pass the bore, it will in a few moments be found in the bulb. If very long, like a catheter, or pencil, or wire, the chances are not so good that it can be brought into line with the calibre of the tube. As a bougie ordinarily breaks at or near the eye, however, its passage is more than probable. Failing, after ten minutes of gentle trial, a lithotrite should be introduced if the body is a bougie or pencil, and is capable of being cut or pinched in two, and the division made. If the bougie is old and brittle, as is presumptively the case, such division with a lithotrite is easily accomplished. The segments can then be sucked out, and their total length carefully compared with the remaining portion or lost body. Every particle must be secured, lest it form the nucleus of a future calculus. Even the broken jaw of a lithotrite might be drawn into the bore. If the surgeon has not the straight tube with open end, which I advise, he may use the ordinary straight evacuating tube.

Necessarily only a small proportion of introduced objects can be removed per urethram, and I should lay it down as a rule, that any foreign body too large to pass the calibre of this No. 29 tube, unless it be very soft and pliable, should be removed by lithotomy, either perineal or suprapubic. Lithotomy has its dangers, but laceration is worse. Great care must be exercised in the search, if the object be sharp-pointed, lest a perforation be made. The inflation of the rectum, if epicystomy be done, in order to lift the bladder, must be dispensed with if the object is sharp-pointed. The upper route gives more room, and while there is a slight risk of wounding the peritoneum, yet we must remember also, in the extraction of large objects, as well as calculi, by the perineal route, that the rectovesical fold of the peri-

toneum is in close proximity to the neck of the bladder, and may not escape involvement in the subsequent inflammatory action.

If the walls of the bladder were only of sufficient strength to warrant their immediate sewing with catgut or silk, and permit primary union under strictly antiseptic dressings, while the urine were drained off below, the suprapubic route would certainly be decidedly the better one; but for the present, we must be content to drain the suprapubic wound.

In the absence of an evacuator, the expulsive force of the urine is often sufficient to dislodge a urethral impaction, especially if the meatus is closed for a moment, so as to obtain the full dilating power of the water. Failing in this effort, if the foreign body can be located and the urethra closed, a large injection of sweet oil may be thrown in, after a hot bath, and the largest possible bougie carried down to the body to stretch the membrane, while pressure from behind is made either by the surgeon's finger or by the expulsive efforts of the patient's bladder.

Should lodgement be made in the fossa navicularis, the spoon of the ordinary pocket-case can often be hooked behind the object and assist in coaxing it forward. A hairpin, or wire doubled upon itself and slightly bent, or a blunt curette, makes also a valuable extractor. An excellent instrument also is the articulated scoop of Leroy d'Etiolles, which, being introduced past the foreign body, has a mechanism by which its tip is then bent at right angles to the shaft, and is capable of making strong but dangerous traction. The abruptly short-beaked sound that I always use for sounding the bas fond of the bladder, can sometimes also be "wormed" past the obstruction, and effect its dislodgement. Long urethral forceps are of great service, as they serve partially to protect the canal during extraction, but they do so far less effectually than does the straight tube before described, which should be placed in every evacuating set. Hunter's or Civiale's three-bladed forceps are occasionally used, but I always look with abhorrence upon dragging any object forcibly through the canal. A dangerous instrument is the urethral lithotrite of Reliquet, as *incision* is infinitely safer for all rough and large bodies. When the substance lies posterior to the triangular ligament, gentle attempts should be made to push it into the bladder, only after the evacuator has failed to dislodge it. If necessary to operate, the raphe should be closely followed, while a large staff is held in position to indicate the location of the obstruction and of the tube.

An incision in front of the scrotum is easily made, and should be closed after the removal of the body by catgut or quilled sutures. Treated antiseptically, and with either a retained catheter, or with frequent catheterizations, immediate union may be confidently expected. The quilled suture gives more perfect rest by its splint action.

If a stricture exists, and the foreign body is lodged behind it, dilatation or free external incision of the stricture should be practised.

For the removal of pin, bonnet pins, or needles, from the urethra, the point can sometimes be im-

bedded in a wax or gum bougie, but it is easier washed out with the evacuator. If immovable, the point can be pushed through the walls of the urethra, and by sharply bending the penis, the head after reversal drawn through the tube by suction or by forceps. It is seldom necessary to cut the pin when this method is used. If a piece of nitrate of silver is lost from a porte-caustique, the evacuator, charged with salt water, should be at once used if the force of urination does not expel the mass. Many ingenious devices have been practised in the absence of instruments, to rid the urethra of impacted bodies, but the knife is far safer than rough instrumentation. In the absence of the straight evacuating tube, an extra sized catheter, with open end, and a large syringe, might prove useful.

Blood-clots in the bladder are practically foreign bodies, and are best removed by gentle suction through the curved evacuator, or through the blood catheter, which I here show, the large eye of which is closed down during introduction by a spirally cut obturator.

Catheter accidents are so frequent that instruments should be often examined. Only recently I found that the distal extremity of my much-used pocket case instrument could be slipped from its screw-thread by a very small amount of traction. Old gum bougies should be thrown away as soon as they begin to lose their elasticity.

To summarize:

1. The litholapaxy evacuating tube, large, straight, and with open end, is the surest and safest instrument for the removal of foreign bodies from either urethra or bladder.
2. The fenestrated lithotrite should be employed to break up all bodies capable of division.
3. Incision of urethra or bladder is safer than a tear of the neck of the viscus or of the canal.
4. The suprapubic and median perineal are the safest routes of entrance to the bladder when suction fails.
5. Forceps should be used with the greatest care, and always through a straight tube, which insures protection both to the urethra and neck of the bladder during both exploration and extraction.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, November 7, 1887.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

DR. J. A. ROBISON read a paper on

THE TREATMENT OF PERTUSSIS.

He said that since the discovery by Poulet in 1867 of a parasite which is probably the cause of whooping-cough, the disease has been treated by the local application of such germicidal agents as carbolic acid, eucalyptus, boracic acid, sulphur, illuminating gas and resorcin. These had been applied by inhalations, insufflations and sprays; but in many cases it

is difficult to get children to allow the administration of the drugs; but he had used with success a solution of cocaine and resorcin in Semple's Atomizing Inhaler, the vapor being so fine that the drug is inhaled into the bronchial tubes without producing any laryngeal spasm. This method of treatment had been successful not only in relieving the cough, but in cutting short the course of the disease.

DR. F. E. WAXHAM: Whooping cough is a disease for which a great many specifics have been advocated, but I really believe that we possess none. Something over a year ago I remember reading of the fumes of sulphur as being a specific; coming from a high authority, I thought that we had at last found a remedy for this disease, but upon giving it a faithful trial I found it entirely useless, the patients manifesting no relief whatever. And the same may be said of a great many other remedies that have been advocated as specifics. As it is generally conceded that the disease is produced by bacilli found in the mucus of the throat, the larynx and the trachea, and that the peculiar cough is reflex in character, it certainly follows that there are two indications to meet in the treatment of the disease: first, to destroy the bacilli as far as possible by means of germicides, as has been advised in the paper read; and second, to diminish the reflex excitability of the nervous system by the use of sedatives and tonics.

DR. G. C. PAOLI advocated the use of ergot in pertussis. In 15 cases it cut short the duration of the disease.

DR. ROBISON, in closing the discussion, said: I was very anxious to hear from the senior members of the profession in regard to their belief in the pathology of the whooping-cough; because on that depends the treatment. I know it was formerly believed to be almost of a purely nervous origin, or at least of reflex origin, and was treated internally by quinine, belladonna, ergot and opium, and antispasmodics. Of late years it seems to me that it has almost been proven that the disease is of local origin, and it does not seem that we can fully deny the observations of Poulet and Berger that they have found the bacillus of pertussis. I mention the treatment by germicides because all of these observers have noticed that the cough was lessened, the disease shortened and the patients obtained relief by local treatment, no internal medication being given. If that disease is a purely local one, due to bacilli, by the use of antiseptics we remove the cause of the disease and the accompanying nervous symptoms, and relieve the cough. I desire to ascertain the general belief of the profession. Is the disease a purely reflex nervous one, or is it due to the parasitic germs? It is generally considered a self limited disease. The Japanese call it the one hundred days disease, and probably in three months it will wear itself out, but it seems to me that by the use of these remedies we can shorten it, and are thus doing a benefit to our patients. In regard to the insufflation of boracic acid in the nostrils, I think that is an argument in favor of this local treatment, for boracic acid is a potent antiseptic. Sprays have been used for a long time, but the difficulty is in spraying the lar-

ynx. The use of powders has been in vogue for a long time, but there is a difficulty in carrying out a treatment of insufflation of powder by means of a powder-blower; although when blown through the nostrils there is a fine dust formed which is inhaled into the lungs. Boracic acid acts precisely as carbolic acid that is inhaled.

THE PRESIDENT, DR. CHARLES T. PARKES, reported

A CASE OF NEPHRECTOMY.

(See p. 9.)

DR. D. T. NELSON: I was very much pleased at the doctor's instructions in regard to preparing the patient for these serious operations, and I believe we have considerable to learn in that direction as yet. The method proposed I believe to be valuable in preventing shock. If it is not wandering in a field that does not apply to the paper I would like to throw out another hint, which is that we prepare the alimentary canal previous to these operations; if you choose, make it antiseptic or aseptic by emptying it and subsequently giving antiseptic drugs, preferably naphthalin in 5-grain doses three times a day. I would like to ask Dr. Parkes if, in making the incision, he was careful to preserve the capsule of the kidney and use that in facilitating his drainage? I have had but one case of removal of a carcinomatous kidney. I removed that from the anterior region, not knowing what I was going after. I hoped I had a cyst of the liver of a hydatid form, but on reaching it I found it was the kidney. I opened the capsule of the kidney and preserved that, and after the kidney was enucleated, which was done much more easily than I supposed it would be, I had no difficulty in closing the vessels in the manner the doctor has described. After ligating the pedicle it was dropped into the bottom of the capsule and the walls of the capsule fastened to the wound, and drainage-tubes inserted so that there could be no communication with the peritoneal cavity proper. The result of the operation was very satisfactory and there was a rapid recovery, although signs of the recurrence of the disease are appearing in other tissues.

DR. W. T. BELFIELD: The fatal issue of this case through uræmia emphasizes again the necessity for ascertaining the integrity of the opposite kidney before removing the one under suspicion. This precaution is especially needful in cases of renal tuberculosis, since the second kidney is so often the unexpected subject of this insidious disease. In women the urine from the opposite kidney can be isolated by catheterizing its ureter either through the urethra or—if that fails—through a small incision through the vesico-vaginal septum whereby the orifices of the ureters are rendered accessible. If the urine be thus obtained previous to the operation, and be found normal in quantity and quality, the surgeon can be reasonably confident that nephrectomy will involve no danger of uræmia at least; while, if this precaution be neglected, the greatest care and skill may be vitiated by uræmia through unsuspected disease of the remaining kidney.

It is questionable whether for nephrectomy; or, indeed, all operations upon the kidney, chloroform

is not preferable as an anæsthetic to ether. The decided renal irritation caused by the latter may possibly be a considerable factor in provoking uræmia in such cases, where the second kidney is suddenly taxed with an extra burden.

DR. PARKES, in closing the discussion, said: The old incision recommended for exposure of the kidney is an incision made parallel with the last rib, one-half or three-fourths of an inch away, a safe distance away, to enable the surgeon to avoid entering the pleural cavity. With this incision the surgeon has always had a great deal of difficulty in exposing and uncovering the kidney and getting at the blood-vessels. One operator relates that he proceeded all right until he divided the upper half of the pedicle, then the patient bled to death. You can see that the incision here recommended exposes everything to view. If you will experiment on a dead body, with a healthy kidney—trying first the old incision and then this one, you will be convinced of the latter's worth. I am convinced of another thing, that it is a good plan in all cases of pus degeneration of the kidney to open the cavities one after the other, if necessary, for the purpose of diminishing the size of the tumor and also for the purpose of diminishing the congestion around the kidney. The great amount of hæmorrhage that occurs in this operation is from the enucleation of the kidney, and with a small incision it is very difficult to control the bleeding points. I think a great point is gained in every operation by having the work under your fingers.

In reference to Dr. Nelson's question as to whether I cut down on the capsule, I am not positive whether I did or not. I pursued the course which I follow in removing all tumors, to cut down on the tumor and to get as close to it and as far away from the dangerous points as possible. I kept close to the surface of the kidney and away from the peritoneum.

I do not know what would have been gained by Dr. Belfield's suggestion. This patient was secreting urine from the other kidney into the bladder, it was emptied out through the ureter and could be collected and examined just as well as if the ureter had been catheterized. In the first 24 hours the patient passed 7 ounces of urine from the bladder, in the next 24 hours 10 ounces, and so on up to the time of the occurrence of the unfortunate symptoms to which I have referred. The largest amount passed was 17.3 ounces in 24 hours. Up to that time there was nothing in the appearance of the patient that would make one think she was not going to recover. All at once the change and the end came.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, October 6, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D.,
IN THE CHAIR.

DR. JOS. TABER JOHNSON presented a case of
DERMOID CYST WEIGHING 50 LBS.

Mrs. P., white, æt. 32, mother of nine living children, and has had three miscarriages, the last one

about two years ago. First noticed an enlargement of the abdomen six months ago and thought she was pregnant; could distinctly feel a hard mass, which was taken for some portion of the child's body. As this mass was movable, she felt more certain of pregnancy. I saw her at the request of her physician, Dr. W. P. C. Hazen, last June. I was not certain of a diagnosis, and as the growth was not large, and her health being perfect. I advised delay. I saw her again in August. She was still positive that she was pregnant, and as the weather was very hot and her health very good, I still advised delay. I was certain of the presence of a cyst but was uncertain about pregnancy, of which I saw no symptoms. She constantly asserted that she felt exactly as she had when pregnant, and declared that she felt foetal movements.

I saw her again on September 7. The enlargement had been very rapid; she seemed to have doubled in size since I last saw her. She gave up all idea of pregnancy at this time and was anxious for an operation. I examined the uterus for the first time now with a sound, and found it empty and only 3 inches in depth. September 20 was fixed for operation. On the 18th she went to Providence Hospital. Two weeks ago to-day I opened the abdomen in the presence of Drs. Hazen, M. F. Cuthbert, S. S. Adams, Fairfax of Alexandria and others. The tumor was unusually adherent over the anterior surface; the adhesions seemed recent and broke down readily. About three bucketsful of fluid were drawn off and the sac removed in the usual way. Masses of hair blocked up the canula so as to cause the fluid to flow down the sac and around it. Dr. Cutts (H. M.) skillfully compressed the abdominal walls so as to prevent the entrance into the cavity.

The patient made an uninterrupted recovery up to the third day, when she suddenly developed a temp. of 102°. It returned to normal the next day, but the next evening she had much indigestion and the temp. was again 102°. Her pulse but 96. This evening at 6 o'clock (October 5), temp. 101° pulse 84. I find, after repeated inquiry, that three days ago she ate quite heartily of lemon pie, and I think her prompt trouble is attributable to this indiscretion in diet, but I am somewhat anxious about her.

DR. JOHNSON also presented

OVARIES AND TUBES, CYSTIC AND ADHERENT.

Miss M., æt. 28, single. Has been a sufferer at her menstrual periods since puberty; on three occasions has had convulsions accompanying her painful menstruation. Her life the last few years has been a burden. Has had little enjoyment, as any excess in the way of excitement or fatigue increased her pain. She was usually compelled to remain in bed a week and sometimes longer at every period. Since the 10th of July last had been confined to her room with what appears to me to have been an attack of pelvic peritonitis. She has been under treatment for a very long time. She did not get better, and was certainly growing worse. She was brought to me at the Providence Hospital by Dr. H. E. Leach, who had treated her constantly for the last two years.

She begged for some operation which would remove her pain. She jumped at the suggestion of Battey's operation. Indeed, she knew all about it. Dr. Leach had explained to her the nature and effects of the removal of the uterine appendages, and she came to the hospital with the approval of her family, expressly to have them removed if the suggestion of her physician was approved.

I examined her carefully and could find very little evidence of disease except great tenderness, and said I did not approve of the operation, but requested her to write out a brief history of her case. As a result of my exploration she was confined to bed for nearly a week. So great was her pain that poultices, iodine, hot water and morphine had to be plentifully used to arrest it. After reading her letter and a consultation with Dr. Leach, and a full explanation of the risks and effects to the patient, I agreed to make an exploratory incision, and if no trouble was found in the ovaries or tubes I should decline to remove them and would close the incision. This was agreed to, and a week ago last Tuesday I opened the abdomen in the presence of Drs. Leach, M. F. Cuthbert, Tyler, M. Bruckheimer and others.

I found the ovaries imbedded in a mass of adhesions, and cystic. I thought they had been so much damaged by the manipulation necessary to their liberation that it appeared the wiser course to take them out. The gentlemen present all appeared to be of the same opinion. I don't know that they are very much diseased, but I believe they were the cause of all her pain, and that she suffered from many attacks of circumscribed peritonitis which caused the numerous adhesions found; and I don't know any other way to cure such cases. I believe she will now be a healthy and happy woman, and if her menopause is produced that she will be free from her monthly recurring week of agony. I know that she is delighted that they are out, and is entirely satisfied and fully understands what has been done and its effects. She has had no rise of pulse or temp., has taken no medicine, and feels well enough to day to get up and walk.

DR. JOHNSON also reported a case of

COLPO-HYSTERECTOMY FOR CANCER.

Mrs. R., white, æt. 47, married, mother of five children. Had one miscarriage fourteen years ago, since which time she has not been pregnant. She menstruated regularly and normally until sixteen months ago, when she missed her period and supposed the change of life had occurred. Two months later began to have a profuse flow which has continued ever since without much intermission. She could not feel certain which was hæmorrhage. Some of the time the flow was of a brownish color, watery and had a bad odor; shreds of tissue passed also. The first examination was made by Dr. Birdsall in Alexandria about three weeks ago, when, upon consultation with Drs. Smith and Fairfax, it was decided to be epithelioma of the cervix extending up into the body of the uterus. I was requested to see her by these gentlemen, and did so two weeks ago to day. I agreed with them as to the nature of the case, and

also that the sooner all the cancerous tissue was removed the better, even if it involved the extirpation of the entire uterus.

The patient and her family were ready and anxious, and September 29 was fixed as the date for its performance. I hoped to be able to stop short of the removal of the whole organ, and spent at least half an hour in efforts to that end. We all felt that the total extirpation of the uterus offered the patient the best chance of recovering, as all the disease could not be gotten away without doing nearly as much violence as the removal of the uterus itself. From the time the patient began to take ether, which was skillfully given by Dr. H. E. Leach, until she was put back to bed, two hours had passed. None of the cut tissues were sewed together; a rubber drainage-tube was put in and vagina tamponed with iodoform gauze. The patient is now in her seventh day, with a pulse and temp. of about 100°. She has had no pain except in her bladder, which was probably irritated by the catheter during the operation. Tampon and drainage-tube were removed on the morning of the third day. The discharge has been very slight and, with the exception of two or three days, free from odor. She is now feeling well, takes much nourishment and appears to have a very fair prospect to get well; at least from the operation. Whether the cancer will return time will show.

DR. KLEINSCHMIDT thought that the theory best accounting for the presence of dermoid cysts was the one ascribing their origin to misplaced parts or cells of the ectoderm in the process of folding in of the primitive layers composing the area germinativa. These cells from the ectoderm retained their power of producing those structures which we know to be derived from the external integument, viz.: hair and teeth. A similar explanation could be offered for the production of other heterologous structures, e. g., the formation of bone in nerve tissue, as illustrated by a case presented here by Dr. Lamb, where bony plates were found in the medulla oblongata. In the latter case portions of the osseous lamella of the mesoderm had, according to this theory, become misplaced among the cells of the ectoderm, which, as we know, produces in the course of development the central nervous system as well as the external integument. He thought this the theory accepted by most modern authorities in preference to the older explanation of "fœtus in fœtu."

DR. REYBURN: Dr. Kleinschmidt's explanation is undoubtedly the correct one. In the male, teeth, hair and even bone have been found in unusual places, which can only be accounted for by the obliteration or perversion of the developmental process. He had a case about fifteen years ago. The girl was very much enlarged, and was willing to run the risks of an operation to protect her chastity. Unfortunately she died. The cyst contained bone, hair and teeth. He reported the case and it gave rise to an animated discussion. Many of the members thought it a mal-pregnancy.

DR. SCHEFFER: The theory of such growths is of great interest. These cysts are marvels in pa-

thology. The first case he saw made an impression on him. It contained jet-black hair, over a foot in length, and teeth. They are very rare. Certain points in the theory mentioned by Dr. Kleinschmidt seem to conflict. It is not surprising to find these abnormalities in the male. Monstrosities are found in all kingdoms. He could recall an instance in which one fœtus was partly buried in the abdomen of the other, as if it had turned a summerset. Abnormalities are not infrequently met with in twin pregnancies; one grows to maturity and the other remains undeveloped or takes on some unusual development. Bone is not of the ectoderm or outer layer of the embryo, so how will Dr. Kleinschmidt account for it in these tumors?

DR. KING: There is a decided difference of opinion between Drs. Schaeffer and Kleinschmidt. Dr. Schaeffer considers such growths degenerate in character, and Dr. Kleinschmidt a part of the woman's fetal development. A part of the ectoderm remains and later in life develops into hair, etc. He has not studied the development of the generative organs very closely, so does not remember any fold that forms those organs. Such growths are easily explainable on the theory mentioned by Dr. Kleinschmidt.

DR. SCHEFFER: Can we find hair elsewhere? Yes. Then it must be due to misplaced cells. Bone, teeth and hair remain after all else has been absorbed.

The discussion of Battey's operation was postponed till the next meeting.

(To be concluded.)

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Regular Meeting, November 9, 1887.

DR. V. Y. BOWDITCH, in the CHAIR.

DR. F. O. OTIS read a paper entitled,

HINTS TO PHYSICIANS SENDING THEIR PATIENTS TO COLORADO.

From a somewhat careful consideration given to the numerous health resorts throughout the world, and a personal acquaintance with some of them, I am prepared to say that I know of none possessing so nearly a perfect climate for many cases of phthisis, taking it all in all, as that of Colorado; or so nearly fulfilling the conditions necessary for the most successful climatic treatment. "Climatic treatment," says Lindsay, "aims at removing the patient from a climate which induces an indoor and sedentary life to one where an outdoor life of healthful activity may be continuously enjoyed, without hindrance from meteorological conditions. Climatic treatment aims at removing the patient from a comparatively sunless and depressing climate, which impairs vitality and lowers nutrition, to a sunny and tonic climate where appetite, digestion, and sanguification undergo such augmentation as may enable the patient to shake off or hold at bay the tendency to consumptive disease." All this, I believe does the Colorado climate.

Having spent the last summer in Colorado, I was there long enough, perhaps, to appreciate the many bits of knowledge necessary and useful for the newcomer, and not too long to forget or overlook them. When the physician says "go to Colorado," he may not realize that the State is nearly as large as New England and the State of New York together, or larger than England, Scotland, and Wales; and he must, therefore, give his patient more specific directions than these. Generally, however, the physician means Colorado Springs, for there the larger number of invalids or "lungers," as they facetiously call themselves there, go; and undoubtedly this town is better prepared to care for the consumptives than most others in Colorado, for it is not an inconsiderable source of revenue to the inhabitants. Scattering cases go to Cañon City, Denver, Salida, Boulder, and other places, but, with the exception of Denver, the accommodations are probably far better in Colorado Springs, if one is able to pay for them. Some, mostly young men, go out on a ranch, if they are strong enough to endure the hardships and privations consequent upon such a life; but they must be prepared for poor food, and much of it is canned. Wherever the patient goes, the physician under whose care he comes—and he should be under the observation of some medical man—should be informed by the home physician of the history and condition of the patient. Better is it if the new physician is personally known by the one at home. Moreover, the former will render great assistance to the recently arrived invalid by advising him as to boarding places of good repute, and in wholesome localities, and, indeed, in a thousand other ways.

The majority of consumptives go to Colorado Springs, a town of 7000, or more, inhabitants, with the purest of drinking water from the melting snows of Pike's Peak. The physicians, nearly all of whom are there perforce, on account of pulmonary trouble, are men of ability and skill. There is no system of sewerage as yet, but one is in contemplation, and, I should say, was much needed. The boarding houses are many and for the most part seem to offer good accommodations, the average price of board and lodging being from twelve to fifteen dollars a week. What the physicians there advise, and which obviously is the best plan, is housekeeping, if the invalid is strong enough and is with friends; but rents are high. There is a good hotel, the "Antlers," where the new comer will spend his first few days until he has selected his permanent quarters. The character of the society is much like that of a summer resort, quite cosmopolitan, as one would naturally expect from the coming together of people from so many different parts of the country. The daily life of the invalid is essentially an out door one, which is very possible when one considers that there are only thirty-five to forty-six cloudy days in the whole year, and from "October 1st to April 1st there is an average of less than one-half a day of each week when the patient will be deprived of sunshine." During the winter there is practically no rain, and one can sit on the veranda or be in the saddle every day; the day of sunshine during this season being about eight

hours. For some time after coming to this altitude (Colorado Springs being 6080 feet high), comparative rest and inactivity is enjoined, and probably with wisdom; but sometimes it seemed to me that this injunction was carried to an extreme, and that moderate exercise would have hastened the improvement or recovery. Horseback riding is the exercise *par excellence* at Colorado Springs, as elsewhere in the State, and horses are good and comparatively cheap. The rides are innumerable. Out on the plains; to the various Cañons; to Manitou; the Garden of the Gods, etc.

It seemed to me that there was no very great opportunity for one to find remunerative employment in Colorado Springs, for it is not commercially active. Probably some of the other and more busy towns would serve better for this purpose. My impression of Colorado in general, however, is that a man of sufficient strength, with energy and adaptability, who desires self-supporting work, will not be long in finding it. As an illustration of this, I know a young clerk from this city who went to Colorado Springs for pulmonary trouble, but who was strong enough to be about and around after a little. At the Springs he found a cattle-man who took him into his employ and sent him up into Estes Park to look after his cattle. He got the use of a good horse, and was paid a fair monthly salary, together with his board. Possessing Yankee shrewdness he found an opportunity to preempt a quarter-section of grazing land at the same time, and now he bids fair to regain his health and have some dollars in his pocket at the end.

In summer Colorado Springs, judging from my experience, is likely to have many uncomfortably hot days, and it seems to be well for the invalid to seek the coolness of the mountain somewhere and, moreover, it makes a pleasant and agreeable change after a winter spent in civilization, with its consequent and inevitable evils, to have something of the wild and free life of the mountains. There are many of the so called mountain parks, near or more distant, and ranging in altitude from 7,000 to 10,000 feet high, which offer both a cool temperature and all the attractions of grand mountain scenery. One finds hotels in some, in others boarding ranches, and in more remote places he must go prepared to camp out. In all the food will be found more or less bad, depending upon the distance from any source of supplies, but unless very delicate, the invalid will soon learn to put up with it and will have such an appetite from the life and invigorating air that he can sit down and eat a piece of raw ham. If one enjoys it and is strong enough for long trips on horseback, he can start on his horse from Colorado Springs, or Denver, and ride to the mountains and have his horse there for use. For those who are delicate and need moderately comfortable quarters and care, there is Manitou Park, Idaho Springs, Salida, and Poncha Springs, near by. Georgetown, a typical mountain village, most picturesquely located in a deep, narrow gulch, on Clear Creek Cañon, and Estes Park, one of the most charming spots in all Colorado, and of which I shall speak a little more at length. It is one of the smallest of the Colorado parks, and is about

ten miles square and 7,500 feet, about, above sea-level. It is reached, from Denver, by railroad to Lyons or Loveland, and from thence by a stage road of twenty odd miles. The journey is made in a day from Denver. There are but few buildings and settlements in the park, the most of it being owned by the so-called English company. Some years ago the Earl of Dunraven visited the place and was so much impressed with its beauty that he got possession of it. There is a small hotel there of moderate price, and three or four boarding ranches. Ferguson's and James's are the best, at which room and board can be obtained for about twelve dollars a week. Each of these ranches consists of a number of small cabins of two or three rooms, some of logs and others of rough boards, but one is very comfortable in them, and he is, or should be only in them to sleep. The food is fair for the mountains, about the same quality as in the Adirondacks. It seems paradoxical that beef should be of poor quality, when all around are herds of cattle preparing for the Chicago market. One has, however, every day, an abundance of the most delicious brook trout.

One of the great charms of the park is the nearness of the mountains. On two sides are the great snowy ranges terminating in Long's peak, 14,272 feet high, the "Matterhorn of the Rockies." The air is of the purest, and almost every day is a sunny one. Very rarely is it uncomfortably hot, and the nights are always cool. Generally a fire is comfortable. But once during a stay of six weeks there did I notice any dew, and one can sleep under the open sky without danger from dampness. Many spend the summer in tents, which dot the park over, but most of the cabins have chinks and cracks enough in them to let in sufficient air. The flora is large and luxurious and the botanist will find continual surprises and delights in it. Indeed I do not see how it is possible to find a clearer or more invigorating air, sunnier or bluer skies, grander or more beautiful scenery in the whole Rocky Mountains than here in Estes Park. I have known of a consumptive getting up from her bed in Colorado Springs to go to the park, and in a short time after her arrival there riding horseback. The winter is not uncomfortable there, I am told, or very cold and so far as climate is concerned one could well live the entire year there if he could endure the loneliness. Indeed it would be to me infinitely preferable to a winter among the snows and ice of the Adirondacks; and if a mountain health resort of such perfect climate existed anywhere in Europe, Davos would be deserted. If one has passed the winter at Colorado Springs I would advise them to go to Estes Park about the middle of June, when occasional hot days come at the former place, and remain until the first of October. If one rides horseback—and half the pleasure of the park is gone if he does not—it is the cheapest way to take your saddle with you and buy a pony there, which one can do for forty dollars and upwards. There is a mail once a day, but no telegraph. Comparing my experience of the climate of Estes Park with that of the Adirondacks, I should say that it was rather warmer in the former place, far dryer, and much more sunny. One feels

the same invigorating influence in both places. The night temperature is about the same, I should think, in both places.

In winter or spring either at Colorado Springs or elsewhere in the State, there are occasional high winds—"wind storms" they call them—accompanied with clouds of dust, which may produce an irritating and injurious effect upon those whose pulmonary trouble is accompanied with much secretion and who have sensitive throats. It may be a question whether it is best for them to remain in consequence of this. The damper, but more quiet and soothing atmosphere of Southern California or the South may serve them better, which is again an illustration of the fact that no one climate suits every case of phthisis.

The best time to go to Colorado is probably in September or October—most delightful months there. The best time to come East for a visit, I should think, would be either in May, June, or October. The best way to go from Boston is, in my opinion, by the New York Central and Lake Shore Railroads to Chicago, and from the latter city to Denver by the Chicago, Burlington and Quincy Railroad. By this means there is but one change from Boston to Denver.

Clothing.—One should have as thick winter clothing in Colorado as in this climate, for the mornings and nights are often very cold. In the sleeping room, moreover, one must make sure that the floor is tight and covered with a warm carpet. A fire should be made in the morning before the invalid arises.

Expense.—It is expensive both going to and living in Colorado. The cost of the journey there is from seventy-five to one hundred dollars; and board in Colorado Springs, as I have said, is from twelve to fifteen dollars a week. Rent of cottages is from fifty dollars upwards. About the only thing that is cheap is horse hire.

Effect from the Altitude.—Some patients think it wise to make the ascent from the Missouri river to Denver gradually, so as to become accustomed to the altitude. The majority, however, I think, go at once to the altitude at which they are to live, and generally, so far as I can learn, experience no especial discomfort or harm from doing so. For about ten weeks I lived at an altitude of from 6,500 to 7,500 feet or more, and climbed mountains, three of which were over 14,000 feet high, without experiencing the slightest discomfort. Nor, indeed, was I in any way unusually affected, except, perhaps, on three occasions. Twice when on high mountains I had a slight headache, and the third time when at Leadville, which is over 10,000 feet high, nearly to timberline, it seemed to me that in walking I got out of breath more quickly than usual. I have climbed high mountains with one of affected lungs, who seemed to endure the exertion and altitude about as well as I. A curious effect of the altitude was noticed by a physician in his own case. When about 10,000 feet high, at which altitude he generally lived, the fever that accompanied his pulmonary trouble was kept in abeyance. When, however, he descended to a lower level it recurred, or increased in severity.

Length of Residence.—In whatever climate one finds his lung trouble improving steadily, there he should remain, not only until all signs of mischief disappear, but, in many cases at least, as long as he lives. I feel convinced that this is the safest and wisest plan, and I think that physicians of experience are gradually growing to this opinion. This is especially true of the Colorado climate, which is such a radical change from the one the patient is likely to come from. I believe the slow improvement, or lack of any improvement, in many cases is due, partly at least, to the worry over the enforced exile, and eager watching for the time when they think they will be able to return to their homes. It is often noticeable how quickly and permanently those improve and recover who take up their residence in Colorado, and settle down to permanent living there, with their friends and family about them. The contrary is also observed with those who make it a mere health resort, and are separated from their family and friends. As, for instance, a wife from her husband, or a daughter from the rest of her family.

DR. F. I. KNIGHT: There is a point that ought properly to come up, although Dr. Otis did not notice it in his paper. I think a warning ought to be given, whenever the subject comes up for consideration, at any rate when it is presented to those who are not familiar with the subject, in regard to the cases which are to be excluded from that climate. It is too much the fashion, when a climate becomes popular for the relief of any disease, for all patients with that disease to be hustled off there. And this is just as much a mistake as it is for every case of pneumonia to be treated with the same drug. It is very much like the treatment of disease with a little book of symptoms.

There are certain kinds of consumption that will die very much quicker in Colorado than they would if they stayed at home, and it is certainly very much wiser for a physician, unless he has considered his case for a long time, and perhaps has counsel upon it, to keep at home cases of very advanced disease; also, to keep out of that climate cases attended with a good deal of fever, and very possibly, also, those cases of a highly wrought nervous temperament. To be sure some of those latter cases do well in Colorado, and some even of the advances cases.

One case I have in mind, which was taken out there without my consent, and not exactly against my remonstrance, which after a long time did do well, although it was a case of very advanced phthisis. As a rule, it is very much safer not to be in haste, at any rate, to send these cases to a high altitude. It certainly has been my experience, and I have had cases of pulmonary disease treated in almost every climate in the world, that the cases of lung disease that are free from fever, and where there is tolerable strength and constitution to start on, do far better in a climate of that kind, a high mountain climate, than in any other; and I think that all climatologists are fast coming to that opinion. In the cases of very advanced disease, in those cases particularly where there is a good deal of febrile disturbance, it is possible that after a time, after the

activity of the disease has been mitigated at home, that patients may be removed there with safety; and this is a thing for consideration.

There is another point which we must also bear in mind, which must be urged upon the minds of men, that in regard to it they may not act hastily, and that is, in sending poor patients off there with the idea that the climate is going to do everything for them. As a rule, if a man has extensive disease of the lungs, and is going to work for a living, he had better be advised to save his money and stay at home. He had better do as well as he can among his friends, and not waste the little that he has accumulated in a change of climate, for his money will go in a very short time out there, and he will be left stranded and unable to work. It is a great pity, it seems to me, to send off, as some physicians seem to be in the habit of doing, every case of pulmonary disease, without regard to their circumstances. Almost every day cases come to me who have been urged to go to Colorado or California, or New Mexico, patients who have perhaps accumulated a few hundred dollars, which is all they have in the world, and they are advised to make a change of climate on account of lung disease. They would be left stranded. I should say that unless the patient had very little disease, and it was perfectly clear that he was able to work, and certainly it is not so with the most of these cases, they would better be advised to stay at home, unless they have means of living a considerable time without any active work.

DR. ALBERT N. BLODGETT: I had an opportunity, some years ago, of investigating the climate of Colorado, although not so extensively as Dr. Otis has done, and I was struck by one or two things that have been mentioned, and some that have not been alluded to. In the first place, the distance is so great, that many patients who start in fairly good condition are very greatly fatigued by the journey. Under any circumstances it is extremely taxing for an invalid. The journey is a long one, and I think that, with ordinary expedition, a week would be thus consumed. I have seen patients who, from fatigue, have seemed to die sooner there than they would have done if they had remained at home. I have supposed that cases in an acute stage of pulmonary phthisis should not be sent to that climate. I think the abruptness with which the change should be made, and the high altitude reached, for persons whose pulmonary structures have been invaded by phthisical disease, is a question that should have more consideration than is usually given it. I have seen healthy persons suffer from shortness of breath on arriving in Colorado to such a degree as to make any sort of exercise burdensome for some days. I have seen others, in Switzerland, who have had a "rush of blood to the head," in an altitude as high as Colorado Springs, which was relieved by frequent nose-bleeds. I have seen the same thing in Colorado. Perhaps it would be better to break the journey for the sake of lessening the fatigue, and also in the hope of accustoming the pulmonary structures which are already diseased, to the rarer air, rather than to make a hasty journey, and per-

haps put a feeble patient in a less favorable condition for improvement than he would be in with a little more attention to this precaution. I can certainly verify everything that has been said, so far as my experience will go, in regard to the wonderful climate which is found in this part of our country. I had an opportunity of seeing a part of Colorado, although it was a very small part, located in the vicinity of Denver and Colorado Springs, and the parts between, and I never saw anything like the clearness of the air in this region. The exhilaration is something remarkable—certainly in a healthy person—and I have no doubt it would be the same, to a certain degree, in a sick person.

I cannot help thinking that the climate of Colorado is the nearest to a typical climate for consumptives which we know anything about; but I believe that far greater care is requisite in the selection of cases, and far more caution in changing to that climate than has heretofore been observed.

Two years ago I made a pretty careful study of the Appalachian range in Georgia. I believe there are certain of the Alleghany ranges which ought to be taken into consideration in sending patients from our own vicinity. There is the change in life, the distance in reference to diminished expense, and the expense of living after one is there. In the western sections there are a great many places where one may live profitably by making it a home for investment. So far as elevation is concerned, there are valleys in certain sections up to 2,000 or 3,000 feet. This is inconsiderable in comparison with Colorado, but very considerable in comparison with other elevations. Eight-tenths is still primeval forest, which equalizes temperature.

It is not as dry a climate as Colorado. The rain fall is probably not less than in New England, though it is placed on the maps as being dryer than any other section—than the Colorado ranges. I saw a number of invalids who felt sure that they could not live on our sea coast border, men who had cavities and had had hemorrhages, and who were in pretty fair health. I have, myself, sent forty or fifty patients to this section, and, although they have different results, in the main it is as satisfactory as double that number of cases who have gone to Colorado. Ample board can be obtained with half the money. The expense of going is less than half, and sometimes a distinct advantage is gained in the fact of the invalid being much nearer home. The air there is as pure as can be found in any part of the world. The mountain tops are covered with snow three or four months, the valleys only three or four days at a time. The locomotion is on horseback *par excellence*. Every other way is uncomfortable in the extreme.

DR. R. W. GREENLEAF: There are one or two medical questions relating to it in which I differ from what Dr. Otis has said. First, in regard to whether the patients who are sent there ought to go right about their exercise or not. It seems to me that it would be far wiser for them to remain at rest for some days. A well person is quite fatigued by the altitude, even in such a place as Colorado Springs. I was perfectly well all the time I was there, but

even a half-mile fatigued me for some days; after that I could walk indefinitely as at home. Instead of remaining in Colorado Springs or in the towns, where there are all the drawbacks of dust and residence in cities, why is it not wiser to advise the patients, if they can afford it, to go into the mountain regions and be in camp all the time? To be sure, some things are hard, but they can be lightened in many ways. Changes of heat and cold are very noticeable. It was very warm at midday, and the water was almost frozen at night. It seems to me that it is far wiser for the patient to go into the mountains as soon as they are strong enough to undergo such extremes, so that they could be out of doors all the time. I was very glad to hear what was said about the selection of cases, for I met many cases who were coming back simply to die. It seems to me that it is a mistake to send other than select cases.

DR. OTIS: I did say that comparative rest is enjoined, and probably is essential. I did not mean to say that I believe in activity as soon as the patient arrives in Colorado Springs. It seemed to me that some of the patients, after they had been there a year, were sitting about on the veranda when it did seem as if they would do better if they moved. In regard to the patient going at once into the mountains, the practical difficulty is that you cannot get good food. Unless he is pretty well and strong, the patient could not endure it. I don't quite agree with what Dr. Knight said about poor people going out there. It seems to me it makes a difference what sort of a person it is. I remember one poor young man with no money, a clerk in a store. His employer gave him a present of fifty dollars, and he went out there. He had serious trouble with his lungs, and was told to keep still. He got a horse and rode about, and soon made friends with a cattleman who employed him and paid him a fair monthly salary, and he seems getting on well. I remember another instance of a young man who had money enough to stay awhile, and found employment. He finally bought his employer out. I think it depends on the kind of man that goes.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Apparatus for Purifying the Air of Rooms of Phthisical Patients—Nervous Predisposition in the Etiology of Facial Paralysis—Therapy of Chronic Metritis—A New Truss.

At one of the last meetings of the Academy of Sciences, Dr. Brown-Séquard presented an apparatus invented by M. d'Arsonval, the object of which is to purify the air of a room occupied by phthisical patients. This apparatus is bell-shaped and placed at the head of the bed, under which the patient breathes. It is so arranged as to be in constant communication, by the aid of a tube, with a chimney

which is heated by gas, a candle, or a lamp. The chimney, which also communicates by a tube with the external air, draws to it all the air that escapes from the lungs of the patient and is expelled outside, so that it does not mix up with the atmosphere of the room. This subject was discussed at the last meeting of the Société de Biologie, when some of the members present did not see any great advantage that the apparatus described above had over keeping the windows constantly open for the renewal of the air. Moreover, Dr. Strauss, while admitting the inconveniences that may result from breathing confined air, observes that the expired air of phthisical patients does not contain microbes. Tyndall has shown that this air was optically pure; it contained neither microbes nor solid particles. Prof. Grancher declared that he had never been able to discover the presence of a single bacillus in the air expired by his phthisical patients. M. Charin arrived at the same results. Consequently, the conclusion was that, as regards microbes exclusively there is no inconvenience whatever to breathe the air expired by phthisical patients.

This certainly does not accord with the experience of the majority of physicians, and Dr. Brown Séquard, in responding to the above remarks, observed that it is well known that phthisis commits greater ravages in the cities than in the country, and, generally speaking, in all places where the population is dense and conglomerated. In prisons the mortality from phthisis is considerable. It has been remarked also that soldiers affected with tuberculosis enjoy better health when they are out in the camp than when they are confined to their barracks. All these considerations, the speaker added, demonstrated the dangers of breathing confined air, and that allowing abstraction for microbes, as this air certainly contains other principles injurious to the health.

In an interesting article on the part played by nervous predisposition in the etiology of facial paralysis, published in the *Archives de Neurologie*, Dr. E. Neumann observes that, when an individual is affected with facial paralysis, the hemiplegia cannot be referred to an organic lesion, one is disposed to accuse the cold, and to impute the malady to its depressing influence on the body, and hence the reason why the affix "*à frigore*" is sometimes applied to it. Such, however, is not the opinion of the author, and, founding his observations on numerous clinical facts, Dr. Neumann thinks that neither the cooling of the body nor the nervous derangement can suffice of themselves to determine, in any person not predisposed, paralysis of the face. These circumstances are only accessory factors which play the rôle of provoking agents the efficacy of which would doubtless be null if they did not find a soil prepared in advance. The preponderating part in the etiology of paralysis of the seventh pair of nerves must be ascribed to hereditary nervous predisposition. When a physician finds himself in the presence of a subject affected with facial paralysis manifesting itself independently of any appreciable organic lesion, he should make an inquiry into the family antecedents as well as into the personal ante-

cedents of the patient, which will disclose an hereditary nervous condition without which all the determinant causes would be absolutely powerless to provoke a hemiplegia of the face. In conclusion, Dr. Neumann suggests that rheumatic facial paralysis should be definitively removed from the category of maladies included under the term "*à frigore*," to be enrolled among the other maladies of the nervous system, and to take its place in the great neuro-pathological family to which it belongs by its origin.

In his lectures on the *Therapeutics of Chronic Metritis* at the Lourcine Hospital, Dr. Martineau endeavored to show that the treatment of metritis is not single, as it was said to be by the older gynecologists; that this disease did not rest on one lesion only, and that it did not suffice to cure this lesion to declare that the uterine inflammation which gives rise to the lesion is cured. The curability of metritis is possible only on the condition of treating the general malady, constitutional or diathetic, on which it depends. The author has thus removed the treatment of metritis from the narrow limits of anatomical and symptomatic localization.

At a recent meeting of the Société de Chirurgie Dr. Lucas-Championnière exhibited a new truss of his invention for patients who have been operated on for hernia. It consists of a simple elastic band with a pad, which is placed above the cicatrix and not on it, as is generally done.

A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Pathology and Treatment of Diphtheria—Sarcoma in Bone.

At the last meeting of the County Medical Association Dr. J. Lewis Smith read a paper on *Present Opinions Regarding the Pathology and Treatment of Diphtheria*. He said that while the investigations concerning the etiology of the disease had clearly established its microbic origin, the microbe which was its specific principle had not been positively demonstrated; and he then went on to speak at some length of the bacillus observed by Locifer and described by Klebs in 1883, cultures of which to the twenty-fifth generation, inoculated in guinea-pigs and birds, produced a whitish exudation at the point of inoculation. The investigations into the microbic origin of diphtheria lend considerable support to the theory that it is primarily a local disease, and that in certain mild cases it never becomes constitutional, or is constitutional only in a very feeble degree. Nevertheless, those who believed that diphtheria was primarily constitutional based their opinions on facts which presented strong evidence in favor of their view, such as the inoculation period of six or seven days in certain cases, the early occurrence of nephritis (even within 24 hours in malignant cases), and the existence of very severe and often fatal nephritis in certain cases where the disease

of the mucous surface had been so trivial as to be scarcely appreciable. The mooted question as to whether diphtheria is primarily constitutional with local manifestations, or whether its nature in this respect varies in different instances, he thought, therefore, must be considered as still undetermined.

As to the propagation of diphtheria, the statistics of Dr. C. W. Earle, of Chicago, showed that the disease was as severe and fatal in salubrious localities in the newly settled and mountainous States and Territories of the Northwest, when it happened to be introduced, as in the foul air of large cities; though dampness and decomposing animal and vegetable substances in rural localities, as in cities, increased the prevalence of the disease. His statistics also showed that diphtheria may be communicated long distances by railways, and probably by merchandise, and they demonstrated its extreme contagiousness from person to person. In the cities there was abundant and melancholy proof of the causative relation of foul air, whether arising from sewers or from stagnant filth, to the disease, and Dr. Sternberg, in his recent Lomb prize essay, had expressed the opinion (which seemed to be borne out by observations relating to the etiology of diphtheria), that the diphtheritic germ, once deposited in damp and foul places, is probably propagated independently of the sick. Thus, in New York city prior to 1850, although foul sewers and unsanitary conditions existed, there was no diphtheria; but in the decade following 1850 diphtheria was introduced, and its germ made its way into the sewers, where in the filth underground it found a nidus for its propagation; so that now, whenever sewer gas escapes into the domiciles of the city, it is laden with the germs of this disease.

The amazing vitality and power of propagation of the diphtheritic germ are apparent when we reflect that it has permanently infected the filthy-flowing current of the sewers in every part of a great city, sewers which in their ramifications extend for hundreds of miles. It is propagated chiefly by exposure of children to the sewer gas, carrying with it the diphtheritic germ, which exudes from this widely extending underground culture-bed, and to walking cases of diphtheria, often so mild that there is little or no complaint of the throat or impairment of the general health. In Dr. Smith's opinion, the germ of diphtheria is of such a nature, and quickly becomes so established in a sewered city, that it can never be "stamped out," as cholera and yellow fever may be, by the active measures of health boards or by legislative enactments; although these may doubtless do much in the way of protection. He also alluded incidentally to the possible communication of diphtheria to man from animals, and stated that recent investigations went to show that it may be thus communicated from poultry, and especially from pigeons.

In speaking of the area of contagiousness in diphtheria, Dr. Smith said that Dr. Lancey had cited cases to show that this area is limited to a few feet, and that Dumez had stated that in a school in which the boys and girls in the same hall were separated by an open space a few yards wide, diphtheria prevailed among the girls, but did not attack the boys. Other

instances were also mentioned showing that the area of contagiousness, like that of scarlet fever, was small, and therefore unlike that of pertussis and measles, which, when they entered a domicile or asylum, usually attacked all the unprotected children. Dr. A. V. Meigs, of Philadelphia, in a paper published last year on the propagation of the common infectious diseases of childhood, placed diphtheria with scarlatina and typhoid fever in one group. Diseases of this group, he said, seemed to be more subject to endemic or local influences than were measles and pertussis, not spreading over wide communities like the latter; and hence, by strict quarantine and preventive measures, their wide extension was more easily prevented. Those who had carefully studied the infectious diseases in children's institutions and elsewhere, Dr. Smith thought, would recognize the truthfulness of this distinction.

In taking up the subject of treatment he remarked that one principal reason why there is such a difference of opinion in regard to the value or remedies was because the disease varies so greatly in severity in different localities and at different times. According to some observations made by Lunin at the Oldenburg Hospital in 1882, turpentine was found to be the most useful agent in the fibrinous form of the disease, and tincture of chloride of iron in the phlegmonous and septic forms. By many physicians bichloride of mercury was at the present time considered the most efficient remedy; but it was necessary to use it with great caution, especially in the form of a spray, or where it was given internally at the same time that the spray was employed. Dr. Smith thought that the quantity of bichloride that could be safely administered to children of various ages was about as follows: To a child of 2 years, $\frac{1}{8}$ grain; 4 years, $\frac{1}{4}$ grain; 6 years, $\frac{1}{2}$ grain; 10 years, $\frac{1}{2}$ grain.

He devoted considerable attention to the treatment by turpentine, both internally and in sprays and fumigations, and quoted a number of favorable opinions concerning its use. (Thus Schenker employed it internally in doses of from 10 minims to 1 teaspoonful, given from one to three times a day in milk, sugar-water or gruel. At the same time he used it as a spray; and of 36 cases treated in this way, with the use of alcoholic stimulus as required, in addition, 31 recovered. Sigel stated that turpentine, in teaspoonful doses, reduced the temperature in 47 cases, in 14 of which the necessity of tracheotomy was apparently obviated by this remedy. Of the whole number of cases treated by him with turpentine, 87, death occurred in 14.9 per cent.; while in those treated with bichloride of mercury, salicylic acid, potassium chlorate, etc., 32.5 per cent. died.

Among the other agents considered by Dr. Smith were sodium benzoate, bromine, calomel, quinine, copaiba, cubebs, pilocarpin, tincture of chloride of iron and potassium chlorate. He spoke in strong condemnation of the use of pilocarpin (which has been highly lauded by some authorities), on account of the disastrous results liable to be produced by it; stating that he had seen it cause symptoms resembling those in extreme oedema of the lungs. In

speaking of chlorate of potassium he gave the following prescription, which he said had been long and favorably known in New York, and was probably more frequently written, with some variations in its proportions, than any other in diphtheria:

R. Tinct. ferri chlor.....	f5ij-ijj.
Potass chlorat.....	5j.
Acid muriat. dilut.....	gtt. x.
Syr. simplicis.....	f5iv.
M.	

Dose, 1 tablespoonful every one or two hours.

The tendency, however, had been in late years to diminish the amount of potassium chlorate, or even to omit it altogether, from its known irritating action on the kidneys, which are so prone to inflammation in this disease; and he thought it should no doubt always be omitted if any albumin appeared in the urine.

In conclusion, Dr. Smith spoke of the solvent action of papayotin and trypsin on diphtheritic membrane. Dr. A. Jacobi had met with good results from the latter; employing a mixture of 1 part of papayotin and 2 parts each of glycerin and water. The solvent action of trypsin, like that of lime-water, was increased by using it in connection with an alkali, and he suggested the following formula for a spray:

R. Sodii benzoat.....	5j-ij.
Sodii bicarb.....	5ij-ijj.
Trypsin.....	5j.
Ol. eucalypti.....	f5j.
Liq. calcis.....	oj.
M.	

At the conclusion of Dr. Smith's paper, Dr. C. A. Leale said that in order to overcome the difficulty of feeding the patient so commonly met with after intubation or tracheotomy, he had been in the habit of resorting to a very simple but efficient device, which he thought ought to be more generally known. This was the introduction of a No. 8 velvet-eyed rubber catheter into the stomach by way of the nose, and the injection through it, by means of an ordinary syringe, of any kind of liquid food that was required.

On the same evening Dr. Frederic S. Dennis read a paper on *Selected Cases of Sarcoma in Bone*, which was illustrated by a large number of interesting specimens and microscopic sections. In concluding it he called special attention to the importance of the following points:

1. An early diagnosis.
2. Complete removal of the disease by amputation of the part in which it is situated, and not by enucleation of the tumor.
3. The careful watching and recording of the subsequent history of the case.
4. The recording of all cases of sarcoma in bone coming under observation, together with the microscopic appearances of the growth.
5. In collecting statistics of this disease the discarding of all cases in which the microscopic appearances are not fully recorded.

P. B. P.

THE SUDDEN DEATH OF DR. J. E. CHANDLER.

Reply to Dr. H. C. Markham.

Dear Sir:—In THE JOURNAL OF Nov. 12, 1887, Dr. H. C. Markham, of Independence, Iowa, re-

ports the melancholy death of a young and accomplished physician, Dr. J. E. Chandler, of Rowley, Iowa, his death having taken place suddenly and almost immediately after the extraction of a tooth. Dr. Markham says: "Some years ago the deceased suffered a *severe rheumatic attack* although not *arthritic in type* (italics mine). For two or three years he has developed heart symptoms, including a mitral systolic murmur." In THE JOURNAL OF Dec. 3 Dr. Markham, in his reply to Dr. Babcock, makes further comment upon this unfortunate death; and it is my honest conviction that, when he says death was due to "a fatal faint, and not heart disease," he draws a conclusion not warrantable in this case, when all the known facts are taken into consideration. I therefore beg to differ with Dr. Markham in this instance, with all due courtesy, and with a due regard for his unquestionable professional ability.

Take, if you please, an hypothetical case with a "mitral systolic murmur" indicating but a slight organic lesion of the heart, and in addition to this a certain degree of general debility, and I admit the possibility of death taking place by ventricular over-distension, and during no greater mental excitement and physical exertion than Dr. Chandler probably expended in extracting the lady's tooth. And, further, I am not prepared to deny, in a rare and isolated case, the bare possibility of death occurring under similar mental and physical circumstances where ante-mortem and post-mortem examinations fail to suggest the organic heart lesion. In Dr. Chandler's case, however, I propose to demonstrate the probability, if not the almost certainty, of his "fatal faint" being due to grave and long-continued cardiac disease, the direct sequela or accompaniment of acute inflammatory rheumatism of a severe and protracted type. In other words, the probability "that compensation had been ruptured and grave dilatation established," suggesting that the immediate cause of death was from paralysis from ventricular over-distension, the result of the heart's muscular inability to perform the extra amount of labor instantly demanded to continue the existence of the patient.

At the late meeting of the Buchanan Co. Medical Society, Nov. 17, 1887, at the request of the Society Dr. S. G. Wilson, in the presence of Dr. Markham, gave his remembrance of Dr. Chandler's case, and referred in particular to the severity of the acute inflammatory rheumatism from which Dr. C. suffered. One attack, during his attendance as a student in the Medical Department of the University of Iowa, occasioning his return to Independence, Iowa, at which place the writer of this letter, during a social call and in the presence of Drs. Wilson and Powers, saw the swollen joints of Dr. C. Dr. Wilson remembers the positive establishment of heart-trouble, and is quite sure the murmur developed was considered at the time mitral. Not only this, but he remembers having made the diagnosis of endo- or pericarditis. He made frequent examinations of the heart after the acute symptoms had subsided, and found the endocardial murmur persistent and easily recognized, his last examination of this character

having been made two or three years ago. Now we all know too well the great likelihood of cardiac disease occurring in cases of this character. We also know that in the majority of cases the diseased condition originates in the left side of the heart in that portion of the endocardial membrane entering into the structure of the mitral valve, and that, again, the majority of mitral lesions revert back to inflammatory rheumatism. Suppose Dr. Wilson had entirely failed to remember his location of the endocardial murmur when last examined two or three years ago, and we have remaining his positive assertion of recognized cardiac disease at that date; and this, taken into consideration with the fact that in a large majority of cases it would, under similar circumstances, be mitral, establishes a very probable diagnosis, the prior presence of inflammatory rheumatism being beyond question. This was two or three years ago; and in the absence of further examinations, we are justified in suggesting the possible implication of other regions of heart, perhaps of the aortic valves. And to increase the probability, permit the suggestion that Dr. Wilson's superior qualifications, characteristic caution, and thoroughness, render his statements peculiarly reliable. I look upon it as an illogical deduction to consider Dr. Chandler's one of those rare and phenomenal cases above referred to, in the face of unimpeachable testimony showing that he suffered from acute inflammatory rheumatism, followed or accompanied by endo- or pericarditis, and the establishment, from this cause, of valvular lesion, the natural and ordinary result of which is hypertrophy and dilatation, in which latter condition his "fatal faint," although not a frequent occurrence, is readily accounted for. Dr. Markham treated him for debility, functional impairment of the liver, nausea, and loss of appetite.

As Dr. Babcock says, "It is not uncommon for patients with heart disease to refer their symptoms to some other organ than the one affected. Further more, the Doctor was an energetic man, very likely to perform his daily duties without complaint; hence it is reasonable to assume that his condition was far graver than he himself would admit or others recognize." Dr. Markham failed to have his suspicions aroused and examine the heart. Yes, the writer of this letter has in his mind a remarkably distinct remembrance of a case located by himself as an attack of malignant malaria, the patient having a "close call," but making a brilliant recovery. There is but little doubt but that it was a case of "femoral hernia." At a time when malaria was in almost every household, overworked, hurried, and in the absence of certain prominent symptoms, I made this blunder. I failed to examine the important region. "I feel that it was good for me to have been there." When by an innocent oversight we occasionally make an important omission or commission, if properly assimilated it will nourish more careful investigation and increase our usefulness in our profession. Never before have I even attempted to burden medical literature. I do so now purely in the interest of correct conclusions. Respectfully,

Fairbank, Iowa, Dec. 9, 1887. G. B. WARD, M.D.

ASSOCIATION ITEMS.

PERMANENT MEMBERS.—From the list of members of the Association published in THE JOURNAL for December 31, 1887, the names of A. E. Goodwin, M.D., Rockford, Ill., and H. N. Moyer, M.D., Chicago, Ill., were unintentionally omitted. In revising and copying so many names by the Secretary and Treasurer, there may have occurred other omissions; and if so, we will supply the defect by publishing all additional names to which our attention may be called.

MISCELLANEOUS.

PROFESSOR R. A. F. PENROSE, Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania, has tendered his resignation to take effect at the close of the present college term.

SIR GEORGE BURROWS, of London, formerly physician to the St. Bartholomew's Hospital, and physician in ordinary to the Queen, died recently, aged 86 years.

NEW BOOKS RECEIVED.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1887.

Health Lessons. A Primary Book by Jerome Walker, M.D. New York: D. Appleton & Co.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year ending June 30, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM DECEMBER 24, 1887, TO DECEMBER 30, 1887.

Col. J. H. Baxter, Chief Medical Purveyor, ordered to inspect the medical purveying depot at St. Louis, Mo. S. O. 296, A. G. O., December 23, 1887.

First Lieut. Wm. B. Banister, Asst. Surgeon, ordered to proceed to Ft. Lowell, Ariz., and report to commanding officer for duty, upon the arrival of Surgeon P. J. A. Cleary, at Ft. Wingate, N. M. S. O. 135, Dept. Ariz., December 20, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING DECEMBER 31, 1887.

P. A. Surgeon C. Biddle, detached from the Marine Rendezvous, Philadelphia, and placed on waiting orders.

Medical Director C. J. Cleborne, detached as member of Medical Examining Board December 31, and ordered to Norfolk Naval Hospital. January 5, 1888.

Medical Inspector M. Bradley, detached from Naval Hospital, Norfolk, January 5, 1888, and placed on waiting orders.

Medical Inspector J. H. Clark, detached from special duty at Portsmouth, N. H., and ordered as member of Examining Board at Washington.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING DECEMBER 30, 1887.

P. A. Surgeon A. D. Bevan, resignation accepted, to take effect January 31, 1888, and leave of absence extended to that date. December 31, 1887.

Asst. Surgeon W. D. Bratton, granted leave of absence for thirty days. December 30, 1887.

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No. 2.

A CLINICAL LECTURE

ON STRICTURE OF THE URETHRA.

Delivered at the West Side Free Dispensary, Chicago, Ill.

BY HENRY J. REYNOLDS, M.D.

PROFESSOR OF DERMATOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO, ILLINOIS; PROFESSOR OF SKIN AND GENITO-URINARY DISEASES, CHICAGO POLICLINIC; CHIEF DERMATOLOGIST TO THE WEST SIDE FREE DISPENSARY;
SURGEON TO THE DEPARTMENT FOR GENITO-URINARY DISEASES, WEST SIDE FREE DISPENSARY, CHICAGO.

(Reported by WILLIAM WHITFORD.)

GENTLEMEN: There are two classes of cases where we are always very liable to meet with stricture of the urethra. *First*, those cases that come to us with a history of having had a continuous gleet for several months or years, preceded by one or more attacks of gonorrhœa. *Second*, those cases that apply to us for relief from an attack of retention of urine. As the case we are about to consider to day comes under the first class, we will now confine our remarks chiefly to stricture as met with in this class of cases.

It is almost a natural consequence, after repeated and long continued attacks of urethral inflammation, that some contraction of the urethral passage should be the result, and organic contraction once fully established, for mechanical and other reasons, naturally tends to perpetuate the inflammation. It is wise, therefore, when consulted for this class of cases, to always investigate the condition of the urethra as regards stricture, etc.

Case.—The history of this case is as follows: Patient is 39 years of age, and since his third attack of gonorrhœa, fifteen years ago, he has had almost a continuous discharge from the meatus, which has several times assumed an acute character. He is obliged to pass his urine a little oftener during the day than is natural, and to get up from one to three times during the night for this purpose. About three months ago, he says, he was cut for stricture at some point near the meatus, but the symptoms have not been in any way relieved by the operation.

Now, in order to know whether this man has stricture or not, let us first get some approximate idea as to what his normal urethra should be. Though not universally conceded, it is a pretty generally accepted theory, that the size of the urethra should always bear a given relation to the size of the entire organ. A penis measuring four inches in circumference will almost invariably be found, if no

stricture exists, and the meatus be sufficiently enlarged, to admit a No. 40 French sound, which is about 24 English. One three and one-half inches in circumference will admit a No. 35 French, which is about 22 English. A circumference of three inches would indicate a calibre of 30 French, or 18 English, etc. Though an ordinary inflammation or congestion of the urethra may naturally somewhat diminish this calibre, I think it fair to presume that, when we find at certain points a deviation of several sizes from this rule, some stricture exists. Many surgeons might claim, however, that a slight amount of contraction, as indicated in this manner, would not be sufficient to demand surgical interference, but I know no reason why, if we pretend to treat or cure stricture at all, the original calibre should not be completely restored.

Examination.—We find in this case a circumference of three and one-half inches, and would therefore expect a urethral calibre of about 35 French, or 22 English. Now, the use of an ordinary sound of uniform diameter through its entire length would be sufficient to determine the presence of stricture, but as it would be impossible to definitely locate one or more strictures in this manner, we make use of what are called "bulbous sounds," such as I now show you. Passing the largest size that will be admitted, or beginning first with one about the normal size and constantly changing to smaller size till we find one that will pass through the stricture, then as it slips through the strictured point the bulb detects the extent and location of the contraction, and so on with the deeper strictures, which, if any exist, are generally found to be smaller than those nearer the meatus. The meatus is usually the smallest part of the urethral passage, but in this case it was cut at the time he says he was operated upon for stricture, and is now nearly as large as we have indicated the urethra should be. We find, as you see, a point extending from two inches to three inches from the meatus which will only admit a No. 21 French bulb, which is about 12 English. Farther down, at five inches, we find a point which will only admit a No. 19 French bulb. Now, while we find a urethra here with a calibre abundantly sufficient for the free passage of urine, it is nevertheless diminished in its calibre nearly one-half at two different points, and while a chronic gleet may at times be met with wherein there is no stricture, it is entirely probable in this case that the discharge is, if not actually caused by this contraction, certainly aggra-

vated or prolonged by it; and as we find here a mechanical imperfection of the urethra, the rational procedure in treating the case, or endeavoring to cure this gleet, would be first to make the urethral canal a mechanically perfect one. We will, therefore, for the time being in treating this case of gleet devote our entire attention to the removal or cure of these strictures.

Treatment.—There are four principal methods for treating stricture of the urethra: *First*, gradual dilatation. *Second*, rapid dilatation or division. *Third*, electrolysis, or the use of the urethral electrode. *Fourth*, cutting or urethrotomy. As there are undoubtedly cases in which for numerous reasons each of these methods may be used to advantage, I may, while the patient is being anesthetized, briefly describe them.

Gradual Dilatation.—To enlarge a stricture by the process of gradual dilatation, conical steel sounds, similar to the ones I now show you, are generally used. The largest sound that will pass through the strictures into the bladder without particular force, or causing the patient any severe discomfort, is to be passed and the same process repeated about every third day, now and then resorting to a larger instrument, as the condition of the canal will seem to permit. In this way, very many organic strictures of the urethra may, in the course of several months, be enlarged to nearly, if not quite, the normal calibre. Some of the objections, however, to this method are its slow process, the repeated liability of its provoking reflex urethral troubles, such as the so called urethral fever, prostatitis, cystitis, etc., especially if the urethra be very irritable, and the fact that in order to maintain the calibre acquired, the occasional passage of the largest sound, which has been used, seems generally to be necessary afterwards.

Rapid Dilatation.—By rapid dilatation or division, we mean the restoring of the complete size of the urethra at one operation by the use of an instrument, such as I now show you, known as a "urethral divisor," an instrument which, as you see, when passed into the urethra, may be expanded by various devices, and made to rupture the contracted tissues. In strictures of the deep urethra the tissues, owing to their more unyielding character, may be generally ruptured by this process, and the effect or result is then very similar to what it would be if they had been cut. But in strictures anterior to the scrotum the tissues, instead of always rupturing during the process of division, frequently stretch like India rubber, as it were, and immediately come back when the tension of the instrument is removed, leaving still some contraction, and the latter is one of the principal objections to treating strictures by this method.

Electrolysis.—Though there are to me some very important objections to electrolysis as a scientific method of treating stricture of the urethra, it nevertheless has its merits, and is in suitable cases, to say the least, a very useful adjunct in the treatment of stricture. As it is a fact, however, admitted I think, by even its most ardent advocates, that strictures

cannot well be enlarged to more than about a No. 14 or 16 English in size, by this method, it is therefore best, if not only adapted to the treatment of strictures of small calibre. In treating strictures by this method a galvanic battery, so constructed as to give the best electrolytic effect, is required. A urethral electrode, such as I now show you, which is a metallic sound insulated to within about one-half inch or so of its tip, and so arranged that it can be connected with the negative pole of the battery, and which should be several sizes larger than the stricture to be treated, is passed down and pressed against the stricture. The circuit is now completed by placing the positive electrode on some adjacent part. As to the strength of current required, no definite rule can be laid down; with the ordinary McIntosh battery, from eight to sixteen cells will be necessary. The electrode is now carefully and continuously pressed for several minutes until it finally passes through the stricture, causing, during the continuance of the operation a certain amount of stinging, burning pain. This operation is to be repeated every week or ten days, using at each time an instrument several sizes larger than at each preceding time. This, then, would complete a rather imperfect description of the method of treating strictures by electrolysis.

As to the merits of this method, it is an unquestionable fact that a larger instrument, if it contains an electrolytic current, can be passed through a very small passage than could be done without the current, as it seems to dissolve its way in, as it were. This I frequently see demonstrated in a very striking manner during the removal of superfluous hairs by electrolysis; when the needle, if the current be on, will pass into the tissues without any perceptible resistance. Owing, however, to the fact that with the use of a very large electrode the current becomes greatly diffused, very little electrolytic action takes place, and the effect then becomes very similar, if not the same as from the use of an ordinary sound. It is obvious, therefore, that this, as a method for restoring the complete calibre of the urethra, is an imperfect one. I occasionally use it, however, when I have a stricture so small that I cannot get any other instrument in, as it is, I think, the best method for enlarging a very fine stricture, preparatory or preliminary to the more radical method of division and cutting, which I always prefer ultimately to resort to, and which I shall now describe:

Cutting Operation.—We now come to consider a method that is the most radical, the one we shall use in this case, and I think the best in all bad cases, namely, internal urethrotomy. I think the best instrument ever devised for this purpose is what is known as the "Otis divulsing urethrotome," which may, as its name would indicate, be used for both division and cutting, and we will now proceed to use it in this case. As the meatus is scarcely large enough to admit a No. 22 English, which is the size we propose to pass on this man, after the strictures are removed we enlarge it slightly by putting it on a stretch with this Otis instrument, and withdrawing the blade, cutting down towards the frænum,

using the instrument therefore upside down; we now pass it down to a point so that when the blade is slightly withdrawn it comes in contact with the first stricture. We next, as you see, turn the screw at the end of the instrument and stretch the tissues up to 36 or 37 French, which is shown by the indicator on the end of the instrument. We now withdraw the blade for a distance of about one and one-half inches, and of course, the urethra being on a stretch, divide all the strictured tissues. We now turn off the tension from the instrument and slip the blade back so it is again concealed, and pass it on down to the other stricture and use the instrument in the same manner as before. We next turn off the tension, allowing the two divulsing blades to approximate each other, slip the cutting blade back where it is again concealed, and attempt to withdraw the instrument, but we find that we are unable to do so. The reason of this is that some of the mucous membrane of the urethra has become engaged between the two divulsing blades of the instrument as they approximated each other, and to remedy this we simply again separate the blades slightly by turning the screw at the end, and the instrument, as you see, is withdrawn with ease. A No. 22 English, which is about 36 French, we now find passes of its own weight into the bladder. As the hæmorrhage is insignificant nothing further is at present required. You now see that, for the time being at least, the contractions of the urethra have been entirely removed.

It now remains to look after the after-treatment properly, which is as important to the ultimate success as the operation. This will consist of passing a full-sized sound, which in this case is the sound we have just passed (22 English), about every third or fourth day, until the parts have become completely healed, which generally requires from one to two months. For the first few times the passage of this sound will cause a certain amount of pain, but it will be seen that by persisting in the constant use of it until the parts are entirely healed, the complete calibre of the urethra must be restored, and once being restored in such a manner that there is no contraction whatever remaining, there will very rarely be any subsequent contraction. In the meantime the patient should receive such internal remedies as are indicated from time to time. We will prescribe for the present the citrate of potash, in quantities sufficient to render the urine neutral or alkaline, and therefore less irritating to the urethra than if it were highly acid in character.

ORIGINAL ARTICLES.

EXPERT TESTIMONY.

Read in the Section on Medical Jurisprudence, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY JOHN GODFREY,

SURGEON U. S. MARINE HOSPITAL SERVICE.

"To know facts, to separate them from supposition, to ar-

range and connect them, to make them plain to ordinary capacities, and, above all, to point out their useful applications, should be the chief object of ambition."—WILLIAM HUNTER.

There is no intention in this paper to indulge to any degree in a legal criticism of the subject about to be presented. The question as to what constitutes an expert witness; what constitutes expert testimony, and what testimony constitutes evidence; what sorts of testimony are admissible, and what are not, and many things besides, germane to the subject, will be omitted, since they belong more strictly to the purview of the law.

The most that will be attempted will be to present a few reflections upon the moral aspect of the subject proper in its relation to members of the medical profession. For this two reasons are offered: One is that, from the structure and behavior of society, medical men are called as expert witnesses more frequently than those of other professions; perhaps as often as all of them combined; the other, that current medical literature amply shows that some features of the subject are yet in an unsettled, and, it may be added, an unsatisfactory state. And it may be added also that, much as medical men are accused of differing among themselves in regard to the particular feature of compensation, they seem to be more unanimous than are those who render decisions thereupon in courts of law.

Leaving the decisions to the courts, because, forsooth, we have to, it may be remarked that, judging from extracts and editorial comments, this one feature appears to be about all of the question that interests the medical world. Nevertheless, it does not follow that it is the most important part; and one feels safe in saying that whatever of time-serving sentiment may show on the surface, there is, among those whose high vocation is medicine, an unexpressed conviction that aiding the Commonwealth in its efforts toward the production of universal good citizenship is better work than mere worldly acquisition.

As to the competence of expert witnesses it has been decided: "That an expert must have special and peculiar knowledge or skill, is as definite a rule as that the search for a lost paper, or subscribing witness, must be diligent and thorough." As all know, the possession of the necessary qualifications is a matter to be determined by the court; yet, notwithstanding the expert witness may be subjected to a preliminary examination in order to test his competency, a recent writer on expert testimony has this to say: "An examination of the cases in which the courts have passed on the competency of experts, shows a lamentable confusion and mixing up of matter of fact with matter of law. It has been judicially commented on as leading to most unsatisfactory results, and unnecessarily obscuring the true aspect of the law on this subject by the diversity of practice which has prevailed in the judicial tribunals." The Supreme Court of Indiana says: "We find no test laid down by which we can determine with mathematical precision just how much experience a witness must have had; how expert, in short, he must be, to render him competent to testify as an expert."

Judging from these and other remarks of learned judges, at least in commenting upon the competency of medical experts, it would seem that they have applied the test with anything but "mathematical precision," since they have expressed estimates ranging from the highest to the most satirical and derogatory. Take the following as instances:

The Supreme Court of Illinois: "It was said by a distinguished judge in a case before him, if there was any kind of testimony not only of no value, but even worse than that, it was, in his judgment, that of medical experts."

The Supreme Court of Texas: "The opinions of medical men are received with great respect and consideration, and properly so."

The Supreme Court of Michigan: "The experience of courts with the testimony of experts has not been such as to impress them with the conviction that the scope of such proofs should be extended."

The Supreme Court of Pennsylvania: "It is well settled that the knowledge and experience of medical experts is of great value in questions of insanity."

The Scotch Courts: The London *Lancet* quotes Lord Fraser as saying: "The evidence was as unsatisfactory as any he had seen. It left on the mind the distressing impression that the science of medicine was simply the science of guessing and experts. Different doctors, with equal confidence and equal dogmatism, expressed contrary opinions upon the same condition of things. He advised the jury to exercise their common sense, throw overboard the medical opinions, and go by the facts."

Evidently, from the foregoing, the Justices have had to do with witness-material of the most diverse kinds, or else they reached conclusions by very different mental processes. But admitting difference in the quality of witness-material does not explain the discrepancy in the estimates of the courts, bearing in mind the quotation cited above, that "an examination of the cases in which the courts have passed on the competency of experts, shows a lamentable confusion and mixing up of matter of fact with matter of law." However this may be, at any rate it is the work of jurists, and shows that medical men are not the only ones given to "mixing up" in matters of law. But it does not follow that expert testimony is bad on account of the *ipse dixit* of a learned judge, for it has happened more than once that an estimate to that effect in a trial court has been reversed in the court above. Opposite opinions, you see, in regard to the selfsame thing. Nevertheless, whatever the cause, the history of expert testimony is such that, so far, it has not been able to gain a character altogether above dispute. For this there are various reasons: some self-evident and in no need of mention; others by no means hard to fathom, but only apparent to close scrutiny. The following from "Taylor on Evidence" may be adduced as part explanation in one direction:

"Perhaps the testimony which least deserves credit with a jury is that of skilled witnesses. These gentlemen are usually required to speak, not to facts, but to *opinions*; and where this is the case, it is often quite surprising to see with what facility, and to what

an extent, their views can be made to correspond with the wishes or the interests of the parties who call them. They do not, indeed, wilfully misrepresent what they think, but their judgments become so warped by regarding the subject in one point of view that, even when conscientiously disposed, they are incapable of expressing a candid opinion. Being zealous partisans, their belief becomes synonymous with faith as defined by the Apostle, and it too often is but the substance of things hoped for, the evidence of things not seen."

Herein are foreshadowed two difficulties; one attributable to inherent deficiencies in human nature; the other growing out of improper methods of obtaining testimony, for surely if one, "though conscientiously disposed," be incapable of "expressing a candid opinion" through zealous partisanship, unquestionably he has no business in the witness box, and the ends of justice must fail till such means be devised for obtaining testimony as exclude the exercise of this human failing.

But these are not the only difficulties that beset the subject. To begin, the breadth and depth of knowledge presupposed on the part of a medical expert is far greater than that essential to the competency of other experts. It is safe to say that not one man in ten thousand is endowed with sufficient mental capacity to master all the branches of medical science. It is safe to say that no living man can truthfully proclaim himself such a master. The man that thoroughly masters even one is justly entitled to, and is cheerfully tendered, the high regard of his professional brethren. If the range of purely medical knowledge is so wide, and so difficult to compass, what must it be when further widened by forensic medicine? Undoubtedly it would be better for the State—for the world at large—if every medical man knew all the minutiae of medical jurisprudence, and stood ready to meet the man of law at every turn; but if, fortunately, he happens to have received some insight into its general principles during his student days, what likelihood is there, while charged with the daily care of patients, or while searching for the secrets of a science that yields at best but grudgingly, that he will trouble his brain with outside studies except in a perfunctory way? Soberly, the problems that daily confront the medical man, plus the drudgery of professional life, leave him but little time to think of, and indeed unfit him for, the intricacies of legal questions. But admitting the time and the ability, it is not unlikely that the ardor of the American mind, at least, would be dampened somewhat by the American interrogatory—will it pay? *Cui bono* is still a common inquiry, and the element of personality is rarely absent from the question. Self-advancement must be behind the action of everyday men. Only the exceptionally great follow promptings from within regardless of reward.

In Taylor's work on "Medical Jurisprudence" there are laid down for the guidance of physician or surgeon called to a case of murder or poison some twenty or twenty five points to be nicely observed before the visit is ended. How many medical men know what those points are? How many possess

the detective instinct and training necessary to utilize them? How little likely that a physician, stopped while puzzling over the untoward aspect of his last case, and summoned to a person in the article of death, or about to be, from violence, will pester himself with these two dozen and odd observations in the interest of future legal proceedings? Very few, notwithstanding the caution of a learned judge that "a medical man, when he sees a dead body, should notice everything," and notwithstanding it has been said that "the great art of counsel who defend persons charged with murder or manslaughter, consists in endeavoring to discover *what he omitted to do.*" Certainly he ought to notice everything when he sees a sick body, but how often does he, although the influences are more direct, where the fruits may be seen, and the rewards approximately calculated?

Rules bearing upon facts in medicine, like grammatical rules, are oftentimes overshadowed by exceptions. This is unfortunate, to be sure, but those who pursue a science should not be blamed for its intricacies. Medicine is not a fixed science, and perhaps will never be, though even the most intelligent laymen pretend to think so; consequently the medical opinions of the wisest and most fair minded must *ex necessitate* be dependent in some degree upon the cast and quality of his brain tissue. In questions outside of fixed science, so long as brains differ, so must opinions, and in spite of the utmost zeal to speak truth.

In spite of profound thinking and the most industrious research; in spite of centuries of effort to probe the secrets belonging to life in health and disease; in spite of wonderful discoveries and vast advancements, the whole domain of medico-legal investigation is yet a wilderness of uncertainties. Turn whichever way one may, the exceptions outbalance the rule. In the matter of poisons, *vis viva*, constitutional resilience, idiosyncrasy, drug habit; in short, any number of peculiarities, leave the basis for evidence covering very wide limits. Sulphuric acid does not always corrode the mouth and fauces, oxalic acid does not always cause pain. Arsenic sometimes gives rise to nausea and diarrhoea, and intense agony; sometimes to collapse and sleep, as if from opium. A man dies from tasting tincture of aconite. A woman lives four hours after taking 70 minims. Immediate ante-mortem violence differs scarcely from immediate post-mortem violence. Slight wounds of the brain sometimes cause speedy death. A child shot through both hemispheres has survived twenty-nine days. And so on, to a tiresome extent, throughout every department of medical knowledge, the exceptions are spread over as wide a field as that between the ages for the beginning and the cessation of menstruation—say from 12 months to 99 years.

There is some excuse, therefore, for the medical man, and it is not entirely his fault that it has been said of him that his "appearance in the witness box is but too often the signal for sport among gentlemen of the long robe."

Let it be understood that all along reference has only been made to those of the medical profession that go to the witness-box unbiased, neither seeking

nor shirking, only desiring to see the right prevail. For the medical smartlet, saturated with self-importance; noising his opinions that cunning attorneys may utilize them; nosing opportunity for notoriety; scenting the chance to vex or vanquish a professional rival; deluded in the belief that his knowledge is above judge or counsel—for such a one it is enough to say that the worst treatment he gets is better than he deserves. The lawyer in search of testimony to fit a special case never fails to find him. The spectacle of a medical man—a man engaged in the highest of all callings—ventilating his opinions, and crowding himself into notice as a desirable witness, for either plaintiff or defendant, is a spectacle that, to the credit of the profession, is not often seen, yet nevertheless seen too often for the profession's good. No better than the smartlet is the medical man in the pay of a corporation, when he stoops to coach lay witnesses in suits for damages, putting aside his high vocation to play the role of partisan and accomplice. But for these it would never have been said from the bench: "The custom of indiscriminately summoning medical practitioners of all sorts, and of all degrees of pathological knowledge and forensic skill, has sadly depreciated the value of medical evidence in courts of justice."

This is by no means flattering, but clearly it is the fault of the medical profession. In suits involving medical testimony outside of absolute facts, it is customary for counsel on both sides to go on voyages of discovery in search of medical witnesses to meet special demands. And the history of the courts affords ample proof that the counsel rarely fail to find what they seek. A distinguished criminal lawyer has told the writer that it is the attorney's rule not to open a trial without knowing beforehand what the medical experts on his side will testify to. Is this as it should be? Is the threadbare argument to be offered, that lawyers are entitled to know in advance how certain opinions will affect the cause of their clients? Hardly, if justice be the first consideration. It might be said that this would sometimes cripple the proper execution of the law. That is to say, it would tend to the excluding of testimony in certain cases necessary to bring the guilty to punishment. If so, for the same reason, it would quite as often save the innocent.

But the reason, to begin, is not a good one. Counsel are no more entitled to previously question a medical man in the interest of clients than are the heads of families before calling him to a case of sickness. But, it may be asked, what if one should possess special learning, and felt that his opinion would prove of great value in a given case? No doubt plenty of doctors have the same sort of feeling in regard to given cases of sickness; no doubt some of us have felt that if we could only be called to the case that our brother has been visiting so long, we could bring it around in short order; but the ethics of the profession forbid any volunteering, and the patient gets along quite as safely with the other doctor. This rule would work just as well applied to expert testimony as to medical practice, the dignity of the profession would be enhanced, its ethics broadened, and justice be none the worse off. Adopt

it, and there would be no more previous quizzings, no legal coach, no putting of hypothetical questions with the triumphant cognizance of satisfactory forthcoming answers, no "cross and piles" swearing, no laughing-stock doctors, no casting out of medical testimony and striking of balance-sheets by juries. Moreover, the vexed question of expert fees, about which there are so many opinions and so many rulings, will have made several strides toward solution.

The medical witness that has made himself "solid" with counsel on one side of a case, may urge that his "professional opinion"—"his hard-earned knowledge"—entitles him to professional compensation; but when, being through with the cross-examination and from under the fire of the lawyers, he hears his opinion offset by that of another "solid" on the other side, and finds that his testimony is not to be accounted evidence, he may possibly have some misgivings as to what constitutes a proper *quid pro quo*.

The last sentence is not meant as a direct argument against charging professional fees for expert testimony. The question as to whether it should be done is still an open one, with decisions on both sides, and apparently of late with a leaning of the courts toward the side of the medical man's doing it. Reports of various trials throughout the country show pretty conclusively that the majority of the medical profession inclines to this side, and the reasons therefor—always the same, and unnecessary to give—seem to be self-satisfying. On the other hand there are others—equals of the best—who think differently. They claim that medicine is not a trade but a mission; that he who espouses it takes upon himself the obligation to heal the sick and preserve life, to sustain right and combat wrong, leaving the question of emolument for after consideration. They say that to stickle for a fixed consideration in dollars and cents when crime is to be punished and justice to be rendered, is opposed to the most sacred traditions of the healing art, and contradicts the exoteric pretensions of its followers; that the outward avowal of the votaries of medicine is to stand by the weak and assist the needy, if needs must, without money and without price; that the medical man so compacts with his Alma Mater; that compacts made should be kept; and that he no more than a missionary, should stop to count the cost when good is to be done. They reason that the Son of Man so taught; that it was implied in the advice to take no thought for the morrow, and in divers other teachings; that these teachings, although not at one with the utilitarian instincts of succeeding ages, have been accepted as coming from the Source of all wisdom by such numbers as count far into the millions, and that acceptance presupposes belief, and belief demands practical exemplification. In fine, that in all ages of the world the best work of every kind has been done without hope of other reward than that arising from the consciousness of benefiting humanity.

These claims may be regarded by many as far-fetched, and little better than vagaries, antagonizing the cut-and-thrust tendencies of civilized life, but whether they are, and whether they do, at all events, they are not over pretentious in professing to be de-

duced from valid premises. It should be added, too, that those who make these claims are imbued with no exaggerated notions of sentimentality, and have as few communistic leanings as the most hard-fisted individualizer in the profession. Nor, no more than the rest of us, do they believe the millennium to have come, understanding full well that man must live by the sweat of his brow, and that a return for services rendered is one of the essentials to the well-doing of the race. In short, they say strip the subject of all declamation, and let those that write *Doctor Medicinæ* after their names, declare whether they are engaged in a trade or a mission, whether the business of life means bargaining, or trusting to such emolument as enlightened communities are willing to give for work well done.

The solution of the question of extra fees for expert testimony will not be attempted, seeing that in any event it must hinge upon opinion—the opinion of the courts, and the prospects of unanimity among them is still a long ways ahead. Instead, and in conclusion, two propositions are submitted with a reasonable confidence in their fairness.

1. In medico-legal cases, if men who practice medicine and surgery are willing to sacrifice professional dignity and cheapen professional knowledge by committing themselves beforehand as to what they would testify if called upon, then they ought to be content with such pay as the law chooses to allow, for, indeed, they are very nearly on a level with the "irregular" who, after hearing the symptoms described, obligates himself to cure the malady for so much in advance.

2. If a medical man, on account of his professional attainments and the stamp of manhood that he bears about him, is summoned to testify uncommitted in any sense, then he is entitled to such honorarium as his time and talents usually bring him, and it safe to say that such a man will ask no more than he rightly deserves.

THE CAUSATIVE RELATION OF AMETROPIA TO OCULAR DISEASES.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY JOHN E. HARKER, A.M., M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOLGY, COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO.

In calling attention to this subject the writer does not desire to create the impression that he has anything purely original to offer. The relation of refractive errors to diseases of the eye and its appendages has been considered in communications from some of our best authors. If, then, he only succeeds in adding corroborative evidence to what has already been written, and in drawing forth an expression of opinion from those in attendance, he will have accomplished his aim.

Every one engaged in treating ocular diseases frequently observes that an overstrained eye shows evidence of irritation and congestion of the anterior part of the globe or lids. By an overstrained eye is

meant one whose accommodation has been taxed to an unusual extent. When we consider the direct relation between the nerve supply of the ciliary muscle and that of the eye and lids, it is very easy to account for the results just mentioned by what is termed reflex irritation. If the straining of accommodation for a reasonably short time will produce marked congestion of the ocular and palpebral conjunctiva, we can readily understand how important a rôle this would play as a factor of disease when conditions are present necessitating almost constant effort.

Time will not be consumed in repeating clinical facts in this connection that have already become classical. Your special attention will be directed to the influence of accommodative strain in maintaining some of the common forms of chronic disease. While the following remarks are also applicable to diseases of the lids and iris, more stress will be laid upon conjunctival and corneal affections. Among the recognized causes of simple acute conjunctivitis we find ametropia mentioned, and while this may be noted and considered in the treatment by most practitioners, the writer's experience leads him to believe that not sufficient importance is attached to it. Undoubtedly there are many cases due to this or other causes that pass into the chronic stage before being controlled and the over-sensitive ciliary muscles continue to act, even when not required; keeping up sufficient irritation to counteract all ordinary treatment.

As illustrating this point three cases will be cited from the writer's practice:

Case 1.—H. M. P., æt. 36, of Newton, Ill., presented himself in October, 1882, and gave the following history: For nearly twenty years he had been a sufferer from granular conjunctivitis associated with pannus. During these years he had been treated by many physicians and used nearly every patent nostrum that came to his notice. The result of the variety of treatment was in most instances temporary improvement, but whenever he attempted to use his eyes the old trouble returned. To use his own expression, "during all these years I have not been able to attend to my business properly for one month at a time on account of my eyes."

Examination showed the usual appearances of the conjunctiva and cornea found in such cases. Vision was $\frac{20}{60}$ in right eye and $\frac{20}{80}$ in the left. Photophobia was marked and the tears flowed freely when the eyes were exposed to light.

Treatment consisted in the use of a solution of atropine (gr. iv- $\frac{5}{32}$) every three hours during the day, and the free bathing of the closed lids with hot water. After two weeks' use of the atropine his cornea cleared up sufficiently to allow the correction of his compound hyperopic astigmatism. Vision at this time, with the correcting glasses, was R. E. = $\frac{20}{20}$; L. E. = $\frac{20}{20}$.

The patient being called home on urgent business, passed for a time from observation. On leaving he was advised to wear his glasses continually, use atropine if the eyes became irritable, and apply once daily to the conjunctival surface an ointment con-

taining hyd. ox. flav. gr. iv, vaseline $\frac{5}{8}$ j. Letters received from time to time indicated satisfactory progress, and within six weeks after returning home he was able to keep his books and look after a fair-sized lumber business.

About eighteen months from the time of his first visit he again presented himself. He stated that he had not lost a day from his business on account of his eyes for fifteen months. A test showed his vision to be $\frac{20}{20}$ in R. E. and $\frac{20}{20}$ in L. E. The patient was seen last about two months ago, and he informed the writer that he had had no relapse, his vision in each eye was $\frac{20}{20}$, and no difficulty was experienced in reading or doing work requiring vision at close range.

Case 2.—S. M. G., æt. 32, of this city, made his first visit in June, 1883. He had been under treatment most of the time for nearly eight years for granular conjunctivitis with slight pannus. The gentlemen who had treated him were men of acknowledged ability, and the graphic description he gave of the methods employed showed that they had skillfully used all of the standard remedies applicable in such cases. In fact, nothing seemed to be left for the writer to try, as the list embraced everything from the silver stick to jequirity. Upon careful examination the eyes were discovered to be very sensitive to light and exercise, tearing freely when exposed or used. Vision in R. E. $\frac{20}{20}$, in L. E. $\frac{20}{20}$. Atropine was used as in the previous case, and gave much relief from the lachrymation. A test a week later showed the presence of mixed astigmatism which, when corrected, gave vision $\frac{20}{20}$ in each eye.

The subsequent history of this case corresponds in the main with that of the first. The treatment was very similar, except that mild astringents were employed and continued for a longer period.

Case 3.—J. H. C., æt. 22, was first seen September, 1885. He was led into the writer's office by a friend, being unable to see his way alone. The history elicited was as follows: Seventeen months before he had contracted what he supposed to be a cold. His eyes became inflamed and he immediately placed himself under the professional care of his family physician. Three months subsequently he found his eyes were not improving and decided to consult a specialist of repute. Twelve months' treatment under the skillful hands of this gentleman failed to improve his condition; on the contrary, he grew steadily worse. Becoming discouraged again, he decided to seek advice elsewhere.

Examination revealed a case of granular conjunctivitis, with marked pannus covering cornea. As in the second case, nothing was apparently left to be done in the way of orthodox treatment. The eyes, as in the other cases, were very sensitive to light, and although the cornea were so opaque that vision could not be tested, the symptoms showed clearly the presence of ciliary spasm. It was decided to use atropine, and the patient's accommodation was brought thoroughly under its influence and kept so for about six weeks. Mild astringent collyria were used during the same period, at the end of which vision had so far returned that it was easy to demonstrate the presence of hyperopic astigmatism. Atro-

pine was discontinued for two or three weeks and an ointment of hyd. ox. flav. substituted. The cornea continued to clear up, and atropine was again used to determine the amount of astigmatism. The test was not satisfactory, and the correction was postponed until the pannus had further improved.

About three months after the patient was first seen the astigmatism was fully corrected, and vision was in the R. E. $\frac{20}{20}$, and L. E. $\frac{20}{20}$. The conjunctiva being free from inflammation, the patient was allowed to return home and resume work. When last heard from vision was about normal and no difficulty was experienced in reading.

The cases here reported are typical of a large number that have come under the writer's observation, and it is unnecessary to consume time in giving the history of other cases.

Many forms of corneal disease, both acute and chronic, as well as numerous lid affections, have been found to disappear as if by magic when existing anisotropia was corrected.

A CASE IN WHICH ABORTION WAS INDUCED FOR UNCONTROLLABLE VOMITING OF PREGNANCY.

Read before the Boston Gynecological Society, October 13, 1887.

BY AUGUSTUS P. CLARKE, A.M., M.D.,

OF CAMBRIDGE, MASS.

I was called on April 30, 1887, to attend Mrs. B., aged 32 years, who was suffering from vomiting of pregnancy. Patient menstruated January last, and says she also menstruated March 1, lasting two days. Since that time she had had no indication of a return of the menses. Until April 30, she had experienced during this pregnancy no unpleasant symptoms. The stomach was in fair condition and she was able to take her usual meals.

The patient had been married 13 years. First child, male, was born two years after marriage; that pregnancy was not attended with any serious symptoms, in fact she was advanced in pregnancy several weeks before she was aware of her condition. Her second child, a male, is now 9 years old. The patient suffered continually during the early weeks of that pregnancy but after the fourteenth week all vomiting and morning sickness ceased. The pregnancy continued to full term, and the child was strong and well developed. Her third child is now 7 years old; while pregnant with the third child she experienced at first more or less trouble from nausea from the tenth to the fifteenth week but the nausea was controlled to a considerable extent by small doses of ingluvin and bismuth subnitrate. Patient went on without farther trouble to the end of pregnancy, the labor was normal and she gave birth to a healthy female child. Within a year after the birth of this child she became pregnant but miscarried before the close of the third month. She had no morning sickness nor vomiting of pregnancy.

The next pregnancy began March 9, 1881, and terminated December 14, 1881. The patient was a great sufferer from obstinate vomiting from May 21 to June 20, that is, from the eleventh to the fifteenth

week. After that date the severe vomiting and nausea were under control. During the sickness of that pregnancy ingluvin could not be borne. Iced champagne and siphon soda were freely used and these articles appeared to be of occasional benefit. The application of a small blister over the fourth and fifth dorsal vertebrae was always followed by a marked improvement in the patient's condition. She gave birth to male twins at full term. The patient again became pregnant and miscarried during the third month, which occurred in May, 1883, but she cannot now recall that the pregnancy at that time was attended with either vomiting or nausea.

At the time I was called, April 30, 1887, the patient had not experienced any special trouble until that time. Other rational and physical signs indicated pregnancy and the patient was confined to her bed and was unable to partake of even the simplest kind of nourishment without nausea or vomiting being excited. Siphon soda, iced champagne bismuth subnitrate, oxalate of cerium, acetate of morphia in small and repeated doses were prescribed from time to time with only limited benefit. Counter-irritants to the epigastrium were applied, also small blisters of cantharides to the parts were afterwards applied, these only gave partial relief. Subsequently frequent and repeated applications of tincture of iodine to the os and cervix uteri were made. These gave the patient a good deal of relief. The applications of the iodine were made at intervals of two or three days and sometimes at longer intervals. The patient, when I was first called during her last pregnancy, had a very sallow complexion and she vomited not only what food she took into her stomach but she vomited also vast amounts of frothy and catarrhal substances, and also yellow bile. The urine was heavily loaded with amorphous and granular urates and spiculated spherules of urate of soda. There was no albumen nor urinary casts. Hot-water douches were daily employed and occasionally a third of a grain of morphia in suppository was used at night. Gentle laxatives were occasionally used and at length the complexion and general appearance improved.

Though the patient was unable to retain nourishment for any considerable period, she appeared to hold her ground until May 27, when she was seized with a severe attack of sick headache, a malady from which she had suffered at intervals since childhood. This attack was a great shock to her nervous system. The patient was chilly and vomited and suffered from extreme nausea. The extremities were deathly cold and the system only partially responded to stimulating applications and to artificial heat to the surface of the body. An application of menthol to the head and to the epigastric region, and morphia internally, which had afforded so much relief before now failed her. The usual solution of cocaine could not be borne by the stomach or afforded no relief. The applications to the cervix uteri of course had to be discontinued and chloral hydrate, which has been often recommended, was given in enemata but was not retained, and failed when retained to produce sleep, and the patient was more exhausted from its

use. The pulse was small and the heart was weak, the eyes sunken, and the patient's condition was now evidently extremely critical. R. & C.'s powdered beef peptonoids, and Wells, Richardson & Co.'s lactated food, which have proved so useful in other cases, also failed her, and could not be retained by the stomach nor by the rectum.

Dr. W. W. Wellington saw the patient with me, in consultation, 12 M., June 3. She at that time was utterly prostrated, she could retain absolutely nothing in the stomach. She had vomited the night before sixteen times, frothy substance and whatever she had attempted to swallow. She was also unable to retain enemata of beef peptonoids, or of other nourishment. Dr. Wellington reviewed the plan of treatment, and remarked that the ground was pretty well covered. He regarded her pulse as very feeble, but suggested we should make another effort to give the nourishment in a teaspoonful quantity, regularly as could be done, every twenty minutes, and if that plan failed, and the stomach refused to retain it, to try again the method by injection. Dr. Wellington suggested that digital dilatation of the cervix uteri should be tried, though I had previously attempted to dilate the os and cervix before commencing the applications of the tincture of iodine. Dr. Wellington examined the cervix and made a further attempt at that visit to dilate according to the method of Copeman, but before he had accomplished much he found it necessary to desist, as the patient grew faint. He advised that I should make another trial that evening to dilate the os and cervix. I did so, but the attempt was only partially successful.

The next morning it was very evident that unless the uterus could be speedily emptied the patient would not survive much longer.

The question of inducing abortion we had considered at our consultation, and we also considered that digital dilatation would be a step in aid of that accomplishment. But there was another question to be considered, namely, the danger of hemorrhage, as well as that of shock, and the possible occurrence of septic influences. The question of medical ethics was easily eliminated as the prognosis was neither distant nor uncertain unless the last means at our disposal were promptly resorted to. At 8 A.M., June 4, I placed the patient in Sims' position, and having thoroughly carbolized a No. 14, French scale, bougie, olive-tip, I inserted it into the cervix in a spiral direction across the fundus between the uterine wall and the membrane so as not to do violence to the latter. The bougie was left there for eight hours, and was retained in its position by carbolized cotton tampons. The vagina was washed with a solution of carbolic acid (1 to 40) before the insertion of the bougie.

On the afternoon of that day the patient had a slight show of blood from the vagina, and at 6 P.M. I removed the tampons and bougie, thoroughly disinfected the parts, dilated the cervix somewhat with the uterine dilator and then introduced a small curette to see if all was clear. On removing the bougie I found that it was somewhat eroded. I next introduced a No. 14 platinum probe, olive-pointed; this was passed in the same direction as the other

one was bent, and retained in position by the same means as was the bougie. This was retained until 7 A.M., following, when it was removed, together with the tampon, as I had directed the nurse to do if pains or flowing came on, or any considerable inconvenience was experienced by its presence.

At my visit at 8.30 A.M., the next day I again disinfected the vagina, dilated the cervix, and introduced the curette to see if there was any obstacle to the free exit of the fœtus when it should descend. There had been no flowing of consequence, and the only indication that the patient would soon abort was the occurrence of an intermittent pain. Another carbolized tampon was applied as a precautionary measure against subsequent hemorrhage.

Soon after my visit the pains increased, and by 11 A.M., that day, a fœtus four inches in length was expelled. The funis was small or thread-like. There was no marked flowing after the expulsion of the fœtus, indeed there was no hemorrhage of importance at any time. A large fatty placenta was expelled twenty-four hours after the expulsion of the fœtus, and forty-seven hours after the bougie was inserted into the uterine cavity—for the first time. At no time after the insertion of a bougie was there any increase of temperature, and no chills, and no constitutional disturbance; in fact the patient began to improve as soon as the fœtus was expelled, and was able almost at once to retain by the rectum repeated doses of beef peptonoids and other nourishment.

The stomach gradually grew stronger and by June 12, the patient began to take some nourishment by the mouth, and at no time after means for inducing abortion were adopted was there the slightest increase of temperature or the occurrence of any constitutional symptoms.

June 14, 10 A.M., temperature still slightly subnormal. Stomach has retained some thin gruel. Patient still looks sallow but is improving. Pulse 90. There is no odor from the vaginal discharge. Urine has improved, there is less sediment. Patient took an enema and had a small evacuation of the bowels. Patient feels encouraged and now thinks she will recover.

After this the patient continued to improve and went on to an uninterrupted recovery.

The question is often asked, what is the cause of uncontrollable vomiting of pregnancy? Does it depend upon uterine displacement, local lesion, or an undue constriction of the cervix? Many cases appear to be reflex, and treatment directed towards the lessening of reflex action often yield favorable results. Vomiting of pregnancy resulting from local lesion, as well as displacement, often occurs, and the vomiting is only controlled when we direct our treatment to the removal of these etiological factors. Cases occasionally occur like the one here reported, in which no etiological factors can be discovered, however diligent our search be extended. In the majority of cases of vomiting of pregnancy my own observations lead me to assign as the cause of such sickness the same factors as has Professor Graily Hewitt, of London, to uterine sickness in the non-pregnant state. Professor

Hewitt says that the reflex symptoms of uterine sickness are dependent upon abnormal conditions of the uterus, "consisting of undue softening, congestion and alteration of shape—all more or less associated."

My experience further leads me to the belief that these several abnormal conditions of the uterus are often varied and that such existence, either separately or even in conjunction, may be so slight as not to be recognized by their local manifestations; and that treatment directed to the relief of one of the abnormal conditions may militate against the lessening of reflex irritation emanating from the others. Mechanical treatment of the displaced uterus when properly carried out often yields, as said before, happy results, but cases now and then occur in which the displacement or flexion is easily removed though the nausea and vomiting still persist to an alarming extent. I have notes of a case that came under my care, and though the flexion was controlled, vomiting continued until the close of the pregnancy.

MEDICAL PROGRESS.

CURE OF EPITHELIOMA OF THE LARYNX.—PROFESSOR SCHNITZLER has recently published, in the *Internationale klinische Rundschau*, of November 20, 1887, a paper on the diagnosis and treatment of endolaryngeal new growths; in his paper he records the case of a woman in whom he had destroyed an epithelioma of the larynx by the galvano-caustic method twenty years ago, and who was still living. The diagnosis of epithelioma had at the time been fully confirmed microscopically by very competent and trustworthy pathologists. He was nevertheless afraid that, on hearing the case, some might be disposed to make the usual comment referred to in the following remark of Ducarques: "Cancer is incurable because it is not cured ordinarily; it cannot be cured because it is incurable; and when it is cured, then it did not exist." The following are the details of the case: E. L., an actress of Prague, 20 years of age, was in January, 1867, admitted into the clinic of the late Professor Türck, of Vienna, for persistent hoarseness. Türck stated that vegetations of the vocal cords were the cause of the voice affection. Repeated operations performed by him with the knife (in February and June, 1867) were only temporarily successful. When the patient came, some months later, into the clinic of the late Professor Oppolzer, she was almost absolutely aphonic, and also complained of considerable difficulty of breathing. Schnitzler, who was then assistant to Oppolzer found that the local cords were much swollen, and detected the presence of red vegetations of a granular appearance at their inner side. The vegetations almost filled up the rima glottidis. In spite of the youth of the patient, Schnitzler diagnosed epithelioma, and immediately removed the vegetations, which already threatened to suffocate the patient. The first piece of a large size (of about the size of a cherry stone) which was removed by

the galvano-caustic loop, was microscopically examined by Drs. Biesiadecki and Scheuthauer, then assistants of Professor Rokitansky. Both these experts pronounced the growth to be epithelioma. Schnitzler afterwards heard that Professor Türck had also at once made the diagnosis of epithelioma, and that his diagnosis had been confirmed by the microscopical examination of Professor Wedl. Schnitzler had repeatedly destroyed the disease by galvano-cautery, and was happy to be able to show the patient at the meeting of the Imperial Royal Society of Physicians of Vienna on October 16, 1868, as being cured, that is to say, so far as we were entitled to speak of the cure of epithelioma. The patient was still hoarse, but her voice could already be distinctly heard, and the dyspnoea had completely disappeared. No trace of the growth could be discovered (Report of the Society of Physicians of October, 1868). The patient remained under the observation of Schnitzler for some years longer, and he thought it possible that she might have lived for ten years after the operation. Before, however, he published the case, he wished to obtain exact particulars as to the patient's fate, and, therefore, applied to the physician who had in the first instance sent the patient to him. To his surprise he learned that she was still alive, and that the physician had seen her only recently at Prague, twenty years after the laryngeal epithelioma had been destroyed. Schnitzler went on to ask if it was possible that such excellent microscopists as Biesiadecki and Scheuthauer could have made a mistake. He could not believe this, as their diagnosis was quite positive. After all, why should not recovery take place after the galvano-caustic destruction of an epithelioma, as well as after its extirpation with the knife? The possibility of curing some kinds of carcinoma was, as is well known, admitted by Rokitansky.

PSEUDOTRICHINOSIS (A NEW DISEASE).—By this term is meant a particular form of acute parenchymatous polymyositis, all the muscles of the body being involved in a general inflammation, in the absence of the trichina spiralis. Examples of this affection belong to the curiosities of medicine, according to DR. PAUL HEPP, of Giessen, who reports a fatal case of the same in the *Berliner klin. Wochenschrift*, No. 17, 1887, and who has been able to find very few accounts of any similar cases. The above title has been selected as a provisional one till the true cause of the disease can be made out. The following is a brief history of Dr. Hepp's case: A woman, aged 36, of healthy family, married, and having had three children, began to feel ill in March, 1886. Then a rash appeared upon the face, consisting of numerous red, non-elevated, and non-irritating spots. There was dryness of the throat and some difficulty of swallowing. The rash extended over the neck and back, also to the mucous membrane of the mouth. Severe pains set in over the nape of the neck and the shoulder-blades, and the legs, but not the thighs, became swollen. During the week the pains extended to the sacrum and extremities, and a week later the face and right arm swelled, then the

left arm. The swelling of the face, though it prevented the patient from seeing for the time, only lasted one day. The swelling of the arms was very gradual, and persisted all through remaining life. The back pains reached their climax with the swelling of the limbs, which were also very painful. The pains were not spontaneous, but set in on the least movement. Stiffness was soon superadded, so that the patient had to be fed. The pains were of a dull kind; there was slight drawing of the fingers, but no true formication. The appetite remained good all the time, there was much thirst, the urine deposited a copious sediment, and the bowels were rather constipated. Profuse sweats and sleeplessness were also complained of; never headache. The muscles were found to be swollen and in a semi-rigid condition, not altered by purposive movements. The joints appeared normal and were quite free from pain.

The œdema was peculiarly hard, and barely retained the impression of the fingers. Gentle passive movements could be made without giving pain, but of slight extent only, owing to the contracted condition of the muscles. Each arm seemed like a firm cylindrical tumor, so that it was hard to say how far the muscles participated. The head could not be raised from the pillow; only a slight rotation was possible. Pupils of moderate width, and react well. Voice weak, but normal. Sensorium unaffected. Sensibility to various impressions normal. Tendon-reflexes perfectly lost in arms and legs, also abdominal reflex. Reflex of sole of foot alone preserved. On electrical examination the upper and fore-arms and the thighs and legs reacted neither to the faradaic nor the galvanic current; the œdema of the legs was not enough to account for this. Strong faradism caused contractions in the muscles of the hands (interosseous and thenar). The facial muscles reacted well to both currents. The internal organs revealed nothing abnormal (the spleen was not enlarged), but their examination was very difficult, as it gave pain. T. 101.2°; P. 122, small and soft; R. 18, regular. Diaphragm acted well. Urine scanty, rather dark, specific gravity 1.036; copious urates, some albumen; under microscope, some few cells, but no cylinders.

Within a week or two after admission the patient died in a suffocative attack, preceded for some days by gradually increased difficulty of swallowing. The temperature rose to 104° a few days before death; there were severe headaches and much burning feeling in the skin generally.

Autopsy by Professor Recklinghausen.—A general firm œdema, except on face. Fatty tissue deficient, especially over abdomen. Subcutaneous tissue moist. All the muscles showed a yellowish pallor, with only here and there a few red spots, and resembled rabbit-muscle; they were very moist. Left rectus abdom. ruptured in upper part. Over the lower part of the right biceps brach. very bloody œdematous tissue. Hemorrhagic infiltrations over shin. Diaphragm normal. Heart muscle strongly contracted, of good color, and held a firm clot. The right subclavian vein and the axillary veins held a little fluid blood.

Fluid blood in vena cava. Slight redness of brachial nerves. Lungs large, much congested, a few projecting spots dry and hepatised. Left lung very œdematous. The right pleural cavity held nearly five ounces of yellowish fluid with flakes of fibrin, the left a little turbid fluid. Peyer's patches not to be seen, solitary follicles hardly visible. Liver large, weight 4.3 pounds. Spleen large, pretty firm, weight 9½ oz. Left kidney very large, otherwise normal; full of blood. Right kidney converted into a hydronephrotic sac holding a turbid urinous fluid, but no pus. The communication with the ureter was very small, but admitted a fine probe. Central organs of nervous system presented nothing abnormal, except for an increase of blood; the meninges were very vascular. Gray substance of spinal cord slightly reddened. White substance of pons reddened. Microscopical examination showed the absence of trichina spiralis. The muscles had undergone hyaline degeneration; no fatty degeneration present. There was no increase of intercellular tissue. The viscera (except the right kidney) and central nervous organs showed nothing abnormal.—*London Medical Record*, August 15, 1887.

GANGRENE OF THE ŒSOPHAGUS.—DR. WM. WATT KERR, of San Francisco, reports the following interesting case:

During the month of May, 1887, J. K., a laborer, was admitted to D ward of the City and County Hospital, complaining of weakness, shortness of breath, and difficulty in swallowing. The history of the case showed that the patient had been addicted to the excessive use of alcohol for many years. His breathing had distressed him for about two years, but to this he had paid little attention until a short time before his admission into the hospital, when the difficulty in swallowing began to trouble him. On examination the patient was seen to be thin and poorly nourished; cyanosis was present, but not in any marked degree. In the epigastrium well marked and diffuse pulsation was visible, but palpation and percussion failed to define any tumor. The whole area of cardiac dullness was increased, and a regurgitant murmur was distinctly audible both in the aortic and mitral areas. The epigastric pulsation, together with the difficulty in swallowing, suggested the possibility of aneurism of the descending aorta; but this was rendered very doubtful by the inability to define a tumor, and also by the fact that the sensations of the patient placed the seat of œsophageal obstruction at a higher level than that which would correspond to the pulsating area. A small œsophageal probang was introduced, by means of which the obstruction was detected and overcome with comparative ease.

The diagnosis arrived at was aortic and mitral incompetence, with cardiac dilatation. The obstruction of the œsophagus was regarded as something quite distinct from the heart disease, and believed to be due to simple stricture from some injury to the tissues, probably by means of some corrosive poison, as it is not an uncommon thing for chronic inebriates to substitute mineral acids for alcoholic liquors when the state of their finances renders it impossible to

obtain the latter. The treatment consisted in absolute rest in bed, the careful administration of digitals, nourishing chiefly by means of liquid food, and the passage of a probang twice in the week for the purpose of dilating the stricture. Under these conditions the patient made some slight improvement, the attacks of dyspnea were less frequent than formerly, although they occurred two or three times per week, and occasionally were so severe as to present all the appearance of impending death; but the œsophageal obstruction remained unchanged, in fact, the passage of the bougie did not produce even the most temporary improvement, and therefore its cause remained a matter of doubt. After he had been an inmate of the hospital for about three weeks the patient died.

An autopsy was made by the interne physician, Dr. B. A. Plant, who found all the chambers of the heart very much dilated and their walls thinned; the aortic and mitral valves were incompetent, but there were no signs of aneurism. The œsophagus was entirely free from stricture in its walls, but that portion lying between the pericardium and the vertebrae was softened and gangrenous. The changes in other organs did not present anything of special interest bearing upon the case, there being only those which are most frequently met with as a result of chronic alcoholism.

Was the gangrene caused by pressure on the œsophagus? In the absence of any other cause, and in consideration that the gangrene was limited to that part of the œsophagus underlying the heart, while the cervical portion was healthy, we are inclined to answer in the affirmative; nevertheless, the fact that the pressure must have been very much relieved with every contraction of the heart, and the frequency with which we have met cases of extensive cardiac dilatation, without ever seeing one in which deglutition was rendered difficult, would make us fain discover some other cause than that which was the only one here apparent.—*Sacramento Medical Times*, January, 1888.

CEREBRAL ABSCESS; TREPHINING; RECOVERY.—BARR reports the case of a boy, aged 9 years, who had had an offensive discharge from the right ear for a year. Three weeks before admission into the hospital he was seized with severe pain in the affected ear and side of the head, with a hot and dry skin, and vomiting and drowsiness. These symptoms continued for four days; the vomiting then ceased, but the pain and drowsiness remained. Eight days from the commencement of the symptoms he had a severe rigor, which lasted fifteen minutes. He had six rigors before admission to the hospital, and the pain and drowsiness persisted. There was a perforation in the upper part of the tympanic membrane, from which pus escaped. Firm pressure over the mastoid produced pain. Barr opened the mastoid cells by chiseling through the cortex behind the auditory canal, and injected a weak solution of carbolic acid through the antrum and tympanic cavity out by the external meatus, and also in the reverse direction. A small quantity of

pus and caseous debris was washed out. A drainage-tube was introduced into the orifice in the bone, and iodoform used as a dressing. Twice a day afterward an antiseptic solution was forced through the opening and drum in both directions. Two days later he had a rigor, and the symptoms returned. Five days later there was a sudden and copious discharge of pus from the ear. All the symptoms subsequently became worse, and ptosis of the right upper lid appeared, and it was decided to trephine the skull. The middle ear was washed out with an antiseptic solution, and the scalp and neighboring parts carefully cleansed with turpentine and methylated spirit. A half-inch disc of bone was removed from the squamous portion of the temporal, at a point an inch and a half above and half an inch behind the centre of the external auditory meatus. When the dura was opened and turned aside, the brain tissue immediately bulged into the osseous cavity, and rose above its external level. A hollow needle was inserted into the brain, and, after it had penetrated about three quarters of an inch, there was a sudden escape of foul gas, accompanied by a bubbling sound and the escape of some fluid. The needle was inserted a little farther, when pus of an offensive odor flowed out. The aperture in the brain tissue was enlarged with a forceps, and portions of necrosed brain tissue were removed. The cavity was then washed out with a saturated solution of boracic acid. Pus continued to ooze from the wound, and an aperture was then drilled into the base of the skull, just above the osseous boundary of the external auditory meatus, involving the squamo-petrosal suture. The dura mater was here intact. It was opened and the abscess reached. A stream of boracic acid solution was passed through this aperture so as to wash out the cavity of the abscess, and it made its exit freely by the upper opening. The current was then reversed. Chicken bone drainage tubes were introduced into both apertures, and the parts were thickly covered with boracic acid powder and dressed with sublimated wood-wool pads. The wounds were dressed about once a week. The softened brain tissue at the seat of the upper opening in the skull soon presented a mass of granulations, which increased in size and rose into the aperture in the bone, uniting with the layer which formed on the exterior of the skull. The two soon became blended, and cicatrization rapidly progressed. The child increased in flesh rapidly, and was at the end of six weeks quite well. Three months after his admission all secretion had stopped in the ear, leaving a dry perforation behind. A vulcanite shield was fitted over the upper aperture in the skull, the lower one having completely closed.—*Archives of Otolaryngology*, Vol. 16, No. 2.

SUBCUTANEOUS INJECTIONS OF ANTIPYRIN.—Germain Sée recommended, some time ago, the hypodermatic use of antipyrin in painful affections, in place of morphia: Fränkel records his experience in the *Deutsche medicinische Wochenschrift*, No. 41; and HIRSCH gives a number of cases in the *Berliner klinische Wochenschrift*, No. 46, 1887. He used a 50 per cent. solution in distilled water, a Pravaz

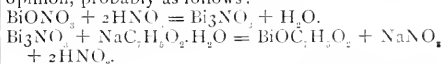
syringeful being injected into the subcutaneous connective tissue. The syringe should be immediately cleansed by passing carbolyzed water through it several times, or it will become obstructed by antipyrin crystals. The pain caused by the injections is very slight, and lasts but a few seconds; and as a rule, there is no inflammation at the site of injection.

Hirsch records seven cases in which antipyrin was used hypodermatically: 1. Woman, æt. 45; severe rheumatism of ankle and shoulder; half a syringeful of the solution injected over each joint. In three minutes both joints were entirely free from pain, which did not return. 2. Woman, æt. 22. Severe pains in ankle for twelve days, for which examination revealed no cause. Syringeful injected near external malleolus; in three minutes the pain was gone, and did not return. 3. Man, æt. 51, with severe rheumatic pains in the muscles of the head, back, neck and limbs, and with momentary pains in the lumbar region and along the course of the sciatic nerve. Patient could not get out of bed, or even raise his legs. A syringeful was injected, in the lumbar region of each side and in the back of each thigh. In ten minutes the patient could raise himself without pain. On the next day there were pains only in the calves of the legs, and half a syringeful was injected into each; the patient got up next day. 4. Woman, æt. 43, with severe pains in right breast, right pectoral muscle painful, and movements of right arm painful. Syringeful injected over right pectoral muscle; in five minutes the pain had disappeared, and the arm could be moved freely; the pain did not return. 5. Severe neuralgia in the temporal region, in a woman, was relieved by one injection in three minutes; subsequent history of this case not known. 6. One injection relieved severe gastralgia in two minutes; the pain returned to a slight extent two hours after the injection. 7. Bronchial asthma in a woman; had lasted for a week, at intervals. Half a syringeful injected on each side of the sternum during an attack; in two minutes the breathing was easy. She had no more attacks, at least for three days, when she was last seen.

Dr. Captain, whose valuable paper in the *Bulletin Medical* is partly a *résumé* of the previous observations of various physicians, including a good deal of matter contained in a graduation thesis by Dr. Caravias, states that the solution of antipyrin in its own weight of water, though it may be used hypodermically, is painful, and he therefore adds fifteen parts of cocaine for every 1000 parts of antipyrin. With this solution the injection is much less painful than when no cocaine is added. The place where the needle has penetrated usually becomes slightly raised and tender, and once or twice small abscesses have formed. The usual dose employed by him is thirty minims. In dysmenorrhœa, and uterine pain generally, an enema (which is to be retained by the patient) of warm water containing 75 grains of antipyrin gives the best results. The action of this drug in relieving pain of very diverse kinds of origin—*e.g.*, neuralgic, rheumatic, herpetic, etc.,—whether given by the mouth, by the bowel, or hypodermically,

is very strongly praised by Dr. Captain, who suggests that every medical man can easily verify its remarkable anodyne power by a few simple trials. The doses he recommends are somewhat higher than those frequently given; thus he puts the dose for internal use at from 30 to 90 grains, and that for hypodermic use at from 15 to 60 grains.—*Lancet*, Dec. 24, 1887.

SUB-BENZOATE OF BISMUTH AS AN ESCHAROTIC.—DR. ALLEN J. SMITH, of Philadelphia, says: In the treatment of a phagedenic tendency in several cases of chancreoids in the venereal wards of the Philadelphia Hospital, the writer, then on duty as a resident physician, became satisfied of the faulty character of the local measures, in that the escharotics usually employed were too severe for use, except with anesthetics, and had to be applied too rapidly because of their excessive action. Recalling certain characteristics of several benzoates, a combination of that acid with bismuth suggested itself as of possible service; and acting upon this idea, Mr. Joseph W. England, Chief Druggist of the Hospital, kindly prepared a quantity of the oxy- or sub benzoate for trial. Bismuth subnitrate was treated with nitric acid, heated and dissolved. To this, hot water in small quantities at a time was added until a marked opalescence was obtained; and the solution thus prepared added slowly and with constant stirring to a solution of sodium benzoate in water. The white precipitate was collected, and washed with alcohol to separate any free benzoic acid or sodium benzoate, and then dried. The chemical reactions upon which these steps are based, are in Mr. England's opinion, probably as follows:



In the second equation the bismuth salt is precipitated and the nitrate of sodium and nitric acid separated in the filtrate, in which is present also a quantity of free benzoic acid. After drying, a smooth white powder, of a relatively light specific gravity, was obtained. This was employed in dressing the chancreoids, just as iodoform or other antiseptic powders are used; the sore being carefully cleansed, a little of the powder was dusted over the surface, and the dressing completed with some simple bland ointment. For a short time no sensation whatever was experienced, then a warmth of the part, and in about ten minutes a burning and tingling sensation manifested itself and continued for several hours—not severe enough in character to render the patient positively uncomfortable, except from excitations of the part, which were afterward controlled by camphor or bromide of potash administered internally, or by adding a little morphia to the bismuth salt in dressing the sore.

The dressing was renewed once or twice daily, and the bismuth powder employed until the type of the sore had changed—within seventy-two hours in the three cases under the writer's care, the unhealthy purulent surface becoming clean and red with active granulation. After this point had been reached

iodoform was substituted for the sub-benzoate and the sores allowed to heal, which they did thoroughly and quickly.

This material is undoubtedly a mild escharotic when thus applied, with a slow and continued action; and erodes the unhealthy tissues gradually and comparatively painlessly, thus avoiding the inconveniences of such powerful caustics as nitric acid and bromide. It was used as an occasional dressing for indolent leg ulcers with marked benefit, stimulating the sores into granulating surfaces, and cleaning them of the peculiar glazed coating such ulcers often present, just as an occasional application of nitrate of silver would do.—*Medical News*, Dec. 3, 1887.

THE VALUE OF TINCTURE OF STROPHANTHUS.—DR. HOCHHAUS thus summarizes his observations of the effects of tincture of strophanthus:

1. For valvular weakness in the stage of compensation disturbance, tincture of strophanthus is an excellent remedy in certain cases, to retard, strengthen and regulate the cardiac action. The retardation occurs first, while the regulating effect only takes place, as a rule, after a few days. Dyspnea and edema are promptly relieved. But the favorable effects, in about one-half the cases, do not appear with the regularity and safety peculiar to digitalis; and in most cases in which strophanthus failed digitalis was effective. Digitalis has, generally, a quicker and more thorough effect, especially in causing diuresis, while strophanthus affects a disturbed respiration far more favorably. It is more difficult to indicate strophanthus than digitalis in cases of valvular weakness, so that it is almost impossible to say beforehand in what cases strophanthus will probably be successful.

2. In chronic degenerations of the cardiac muscle, with usually a small, frequent, and irregular pulse, great difficulty in breathing, and edemas, tincture of strophanthus may be relied on.

3. In acute and chronic nephritis the effect of strophanthus is not so marked as in the above-mentioned affections. The dyspnea often yields to its influence as in the other diseases, but the diuresis and edemas are not favorably affected by it.

4. In cases of palpitation and apnea of nervous origin strophanthus often gives marked relief.

5. Edemas of a cachectic character may be also favorably affected by tincture of strophanthus.

6. In some cases the drug has secondary effects on the digestive tract, causing a loathing of food, followed by choking and vomiting after eating, and sometimes by severe diarrhea. But, as a rule, the aversion to food is the only disturbance, and this passes off when the stomach becomes used to the drug.

7. Hochhaus advises to begin with doses of gr. vj, t. i. d., in a tablespoonful of water or wine, and to add gr. ij daily to the dose until the effect is obtained; though it is not advisable to give more than gr. xx t. i. d. Gr. iij t. i. d. is the proper dose to begin with for children, but the doses should not exceed gr. v, t. i. d.

8. The effect usually appears on the second or

third day, and generally lasts a week or two weeks, though there is considerable variation. Hochhaus has never seen a cumulative effect, even after long use of the drug.

9. While strophanthus cannot lay just claim to all the praise bestowed upon it, it is valuable as an occasional substitute for and ally of digitalis.—*Deutsche medicinische Wochenschrift*, No. 43, 1887.

LIGATURE OF THE EPIGASTRIC ARTERY.—Injuries of the epigastric artery are seldom diagnosed during life. MARINI reports the case of a man, æt. 28, who was stabbed, lost consciousness, and, when he regained consciousness an hour afterwards, complained of great pain in the abdomen. There was but little visible hemorrhage, but his face and mucous membranes were very pale. One of his wounds was in the eighth left intercostal space, penetrating the chest and abdomen, and the omentum protruded. The other wound was 6 cm. below the umbilicus, and 4 cm. to the left of the middle line, and bled only when touched. The diagnosis of injury of the epigastric artery was made from the seat of the wound, the free hemorrhage when its lips were separated, diminution of the hemorrhage on pressure above Poupart's ligament, and the presence of a considerable quantity of blood in the peritoneal cavity. Marini cut down on the artery, and found it completely divided. Hemorrhage ceased when the two ends were tied. A piece of omentum, that became prolapsed during the operation, was excised, and the wound dressed antiseptically. The other wound healed by first intention, after the piece of omentum was cut off. The patient recovered without bad symptoms.—*Lo Sperimentale*, September, 1887.

BRAIDED SILK SUTURES IN OPERATIONS FOR LACERATED CERVIX AND PERINEUM.—DR. J. N. MARTIN, of the University of Michigan, says: I have used silk sutures in thirteen cases with exceedingly good results, and Prof. Dunster has used it exclusively for two and a half years with most excellent results. I claim for silk sutures:

1. They are as easily introduced as silver wire sutures.

2. Easier to tie silk and adjust the parts than to twist silver wire sutures.

3. Much less irritation to the patient (especially in the perineum) while the sutures are *in situ*, which is important.

4. Removal of silk sutures is very much less painful.

5. Silk sutures give as good results as silver wire sutures.

The *hard braided* silk should be used for the sutures (about No. 10 for the perineum, and a size or two smaller for the cervix), and should be rendered thoroughly antiseptic before and after waxing in bichloride of mercury solution (1 to 800 or 1 to 1,000) or carbolic acid solution. In tying braided silk one important precaution is necessary: it is best to make the knot with a triple tie, and the last tie to be drawn down tightly or it may become untied.—*Med. News*, December 3, 1887.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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A STATE BOARD OF MEDICAL EXAMINERS.

It being admitted that the chief object of laws to regulate the education and practice of the medical profession is to protect the people by enforcing a fair standard of both general and professional education for all who are allowed to practice any department of the healing art, it must be admitted, also, that a competent and efficient State Board of Medical Examiners is a necessary part of all such laws. The education and conduct of the members of the clerical profession are regulated by the Conferences, Presbyteries, Synods, etc., of the several denominations, to some one of which every clergyman is supposed to be amenable; while that of the members of the legal profession is conveniently regulated by the Judges of the several courts. But in the medical profession there are no such complete and authoritative organizations as those alluded to in the clerical, or such reliable and impartial tribunals as the Judges of the several courts for the legal, and consequently some different method must be devised for appointing and perpetuating the desired State Board of Medical Examiners in each State.

After reviewing the practical results of all the various attempts to establish boards of censors in connection with medical societies, and State Boards of Examiners by appointment of judges of courts, or by the Governors of States, either on the nomination of State Medical Societies or without such nominations, we are satisfied that no better method can be devised, than to make it the duty of the Governor of the State to appoint all the members of the State Board of Medical Examiners, the same to be approved by the Senate; provided that no person should

be eligible for appointment on such Board who was not possessed of a good general and professional education and had been engaged in the reputable practice of his profession at least ten years. There should be no mention or allusion in the law or in any of its provisions to so-called schools or theories in medicine. The appointing power should be limited only to the selection of men of known scientific and professional attainments and good character, and the Board itself should have but one standard of requirements and examinations for all candidates who may come before it. When the Government, through the agency of its Examining Board, has secured to the people a medical profession all the members of which have given satisfactory evidence of having acquired a good general and scientific education, and a thorough knowledge of all the departments of medical science and practice, it has fulfilled its duty. Whether the men or women thus found qualified and registered as legal members of the medical profession shall, in their intercourse with their patients, prescribe a large dose or a small one, or shall select their drugs in accordance with one theory or another, must be left to the judgment and conscience of each individual.

It would be a good rule to make the State Board consist of nine members, each holding office three years, but eligible for reappointment. Whether the appointing power should be prohibited from appointing any person holding an official position in a medical college either as an officer or teacher, or whether he should be required to select one member of the Board from the faculty of every legally established medical college in the State, is a question concerning which there may be differences of opinion. Probably the first alternative would meet with the most general approval.

ELECTRICITY IN THE TREATMENT OF FIBROID TUMORS.

At the last meeting of the British Medical Association an interesting paper on this subject was read by the great exponent of the use of electricity in fibroid tumors of the uterus, Dr. G. APOSTOLI of Paris; this paper, with one on the same subject by Dr. W. E. STEAVENSON, is published in the *British Medical Journal*, of October 1. Two such papers bearing on this subject are particularly interesting in that they set forth the conservative principles of a specialty that is too much, or likely to be too much, an operative specialty.

What Dr. Apostoli has done in the application of electricity to tumors of the uterus has been, in a few

words, to supplant the old methods of operating by a method that is precise, energetic, tolerable, better localized, thoroughly under control, and more scientifically exact. He made it precise by the introduction of new galvanometers of intensity, exact counters and measures of the electric current; energetic by a novel service of high intensities of current; tolerable, notwithstanding the large doses of electricity, by introducing a new form of electrode, the wetted clay, thus making the cutaneous pole harmless, and permitting the transmission through it of a current of signal medical intensity; he localized it better by the direct application of the active pole, through the vagina, to the uterus, either in its cavity or into the fibroid deposits; and he brought it thoroughly under control by the exclusive use of the unipolar method, thus applying to the diseased uterus a continuous galvanic current of sufficient intensity and duration to produce the required effect. This application, generally inaccurately described as electrolytic, says Dr. Apostoli, should be defined as a galvano-chemical cauterization—a cauterization purely chemical, with two successive and distinct effects developed in the course of the current: *First*, a tangible effect at the points of entry and exit of the current, which, according to the dose and duration, will be a chemical cauterization more or less severe (but not thermic), variable in conformity with the pole, and different in its character at the two poles. At the will of the operator this polar action may be monopolar or bipolar. *Second*, the effect resulting from the circulation of the current from one pole to the other, and therefore called interpolar action; an action that follows every electrical application, setting up a subsequent process of disintegration of the morbid products through which it passes.

But what are the clinical and purely practical results of Apostoli's method? Before going farther it must be said that the positive pole is the express remedy for hæmorrhagic fibroids, and the negative for non-hæmorrhagic—the positive being a hæmodynamic, and the negative producing congestion. If both in their secondary interstitial action induce a regression of the tumor, Apostoli believes that the negative has the greater potency in this respect. Further, if the negative pole be made to enter a fibroid deposit by a puncture, it will insure a more rapid diminution of the tumor; and the negative pole, naturally a congester and but little hæmodynamic, finally becomes markedly hæmodynamic, and will arrest troublesome hæmorrhage after a certain time; an effect caused by the cutting off of the supplementary circulation, by the rapid atrophy due to the

action of the negative current. For the use of galvano-puncture there are certain rules, that may be thus summarized: 1. Absolute and regular antiseptic irrigation of the vagina, before and after each operation. 2. Use as the puncturing instrument the small steel trocar or needle, and let the punctures be shallow, that is, not deeper than from 1 to 2 cm. 3. Make the punctures on the most prominent part of the fibroid; whenever possible in the posterior cul-de-sac. 4. Make the punctures without speculum. Slide the trocar through the celluloid sheath that protects the vagina, after having examined and chosen by touch the point where the puncture is to be made. 5. Ascertain the seat of any pulsation, so as to avoid wounding an important vessel. 6. In case of unusual hæmorrhage immediately dilate the vagina with an expanding speculum, and if necessary put on pressure forceps to the bleeding point.

In answering the question as to the anatomical and clinical results, as regards the material changes it may be affirmed, says Apostoli, that every fibroid tumor submitted to this treatment, sometimes after so short a time as one month, but certainly when the treatment is fully carried out, will undergo a manifest reduction appreciable by the touch and demonstrable by internal measurement. The further diminution of the tumor, which continues for some months, varying in amount from a fifth to one-half of the original volume, is generally associated with a coincident, and equal accumulation of subcutaneous adipose tissue on the abdominal walls. The regression of the tumor is not only apparent during the time of active treatment, but goes on continuously after it has been suspended, and is the persistent proof of the enduring influence of the electrical operations. Simultaneous with the decrease of the bulk of the tumor occurs the liberation of the tumor from its local attachments. The tumor, that at the beginning of treatment was immovable, is made to change its position more and more as the absorption of the enveloping tissues advances. And with the regression of the tumor is a tendency of the tumor to separate itself from the uterus, to become more distinctly subperitoneal, to detach its mass from the uterine wall, and to assume more of a pedunculated form. The clinical are not less striking than the anatomical results. Apostoli generalizes the extent and importance of these results, by saying that 95 times out of 100 they comprise the suppression of all the miseries constituting the fibroidal symptomatology, which may be thus categorically summarized: hæmorrhages, the troubles of menstruation, dysmenorrhœa, amenorrhœa, nerv-

ous disturbances, the direct pains in the growth itself and from mechanical pressure, and the harassing series of reflex actions. And while this therapeutic resource carries us so far as the sensible reduction of the fibroid tumors, and not to their total absorption, yet their complete removal may be anticipated, with a complete restoration of health. The greater number of the women that persist in the necessary treatment are not only cured, but remain well. In some of his early cases Apostoli found an apparently absolute intolerance to high intensities of current, and he abandoned the method in these cases; at present he would simply chloroform the patients, and operate to the fullest extent. And in regard to such cases he lays down the following rule: No operator should admit the failure of intra-uterine galvano-cauterization before having had recourse to the galvano-punctures, which we must enforce either with or without anæsthesia.

From July, 1882 to July, 1887, Apostoli made 5,201 applications of the continuous galvanic current, for the following affections: Fibroids of the uterus—polypi; entire or partial hypertrophies of the uterus; subinvolutions; acute and chronic metritis and endometritis; ulcerations of the cervix; peri-uterine inflammations (perimetritis, parametritis, cellulitis, phlegmons); ovaralgia; ovaritis and peri-ovaritis; salpingitis; ovarian and tubular cysts at an early stage; atresia; and hæmatocele. The 5,201 operations were made on 403 patients (this number does not include the patients on whom faradism was used.) Of this number he lost two patients, the responsibility for which he takes upon himself, as well as of ten phlegmons that he either excited or aggravated; and in speaking of these he takes occasion to warn against careless use of the method, especially of the negative pole when there is any trace of peri-uterine inflammation present. "You must feel your way, testing the susceptibility you have to work upon by two or three preliminary operations, in which you give doses so feeble that they only serve to enlighten you, and to habituate the patient, so as to lead on safely to the use of higher intensities."

MEDICAL SOCIETY PROCEEDINGS.—We are pleased to receive good reports of the papers, cases and discussions presented to the medical societies in all parts of the country, and happy to publish them as fully as our space will permit. Recently some societies have been sending us reports of *discussions* on papers that had been read, without including either

copies of the papers or even brief abstracts of them. Such discussions, without the papers or abstracts of them, to which those participating in the discussion are constantly alluding, lose half their value and often contain sentences unintelligible to readers of THE JOURNAL. We must decline to use such reports.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, October 12, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D.,
IN THE CHAIR.

Dr. T. C. Smith read the history of the case and presented the specimen, for Dr. P. J. MURPHY, of
A UTERINE FIBROMA REMOVED PER VAGINAM.

Mrs. McG., white, æt. 40, born in Maryland. Admitted to Columbia Hospital for Women, Sept. 8, 1887. She is married and has had two children, the youngest 13 years old. Had a miscarriage from some unknown cause four years ago and has complained ever since of considerable pain in back and hypogastrium, shooting down the legs. For the past three years has had a profuse leucorrhœal discharge which was at times bloody and again very watery. During the past three months the odor of this flow has been very offensive. Menses regular and profuse lasting about four days, the last epoch having been in the latter part of August. She has very frequent and severe attacks of intermenstrual hæmorrhage from the slightest causes, the most frequent being excitement; appetite poor; frequent attacks of diarrhœa and of severe headache. She presents the appearance of a woman subjected to severe constitutional drain; the face has a pale and leaden hue. She was kept in bed until Sept. 11, when she was examined with the following results:

The outline of the uterus not distinctly ascertained; but bimanually a large globular growth three or four inches in diameter was found slightly protruding into vagina from the canal of the cervix uteri. Its borders could be followed into the cervical canal but owing to the size of the growth its attachments could not be definitely made out. The watery discharge is now profuse and has an odor not entirely unlike that of carcinomatous discharges. It was thought to be a pediculated fibroid of the uterus although the density of the foreign body was not marked. The odor now became so offensive that the patient was isolated. This however was rendered unnecessary by a few hot carbolyzed douches. The urine was not voided freely and it was examined, although nothing other than a general diminution of salts was found.

Sept. 17. Dr. Jas. E. Morgan came in consultation and advised early removal of the growth to save the woman's life. It was thought best to improve her general condition previous to operating and she was

given the following tonic: sulphate of quinia, 30 grains, tincture of chloride of iron, 4 drachms, to mix and take 30 drops in water three times daily. Milk punch every four hours, beef tea, etc. Three days later she had a severe attack of diarrhoea accompanied by rectal tenesmus, which however soon yielded to ordinary doses of bismuth and opium.

25. Iron and quinia discontinued. Gave the following: Make 36 grs. of ergotin, 2 grs. of extract of *cannabis indica* and $\frac{1}{2}$ gr. of strychnia into 12 pills, to take one every four hours. Menses appeared on the 28th and lasted until Oct. 5, but not so profuse as usual although more painful.

Oct. 6. Growth protruded more and was attached on every side to cervical canal. Uterus now felt distinctly and is enlarged, hard and of irregular shape, the lateral diameter being disproportionately increased.

8. Patient anesthetized and the foreign body removed. It was first drawn through the vulva (the patient being in the lithotomy position), and its sessile pedicle which was found attached to nearly the entire surface of cervical canal and fundus uteri, was severed by Thomas' saw scoop, Yarrow's modification; very little hemorrhage occurred as the hard fibrous pedicle was sawn through.

The uterus and vagina were washed out by a carbolyzed douche at a temperature of 110° F. and a pledget of styptic cotton placed against the cervix uteri. Some oozing began about an hour after the operation but soon ceased. Patient was very weak but improved rapidly after the oozing ceased and is apparently making an uninterrupted recovery. The tumor removed is globular having a circumference of about 8 inches in every direction and weighs 6 oz.

The President read a letter from DR. ALEX. DUNLAP, of Springfield, Ohio, in which he gives the following interesting case:

A LAPAROTOMY ON A FEMALE CHILD NOT AN HOUR OLD.

The child was perfect in every respect, vigorous and healthy, except that the bowels, commencing close to the duodenum, down to the sigmoid of the colon and omentum, with the mesentery, dragged through a small opening in the umbilicus, and had been developed in a sac formed in the umbilical cord. The sac would have contained about a pound and a half. I found that it was impossible to return them through the opening without enlarging it, and then when I commenced to enlarge the opening I found that the abdominal cavity was so contracted from the absence of the bowels being developed in it that it would not contain them without enlarging it. I therefore made an opening, commencing in the umbilicus, running up two inches, and then began stretching the walls of the abdomen with my fingers; then catching portions of the bowels and forcing them down into the cavity, while assistants, with hooks passed through the cut edges of the walls of the abdomen, held them firmly up. In about twenty minutes I succeeded in forcing them in and closing the wound with five sutures and ligatures to the cord close up to the natural skin. The operation was per-

formed October 2, 1887, without chloroform or an anæsthetic of any kind, and as far as any visible signs were manifested by the child in struggling, crying, shock or pulse, that it was suffering pain there was none to be seen. For all that you could see the child might have been enjoying the operation hugely, nor has there been the least unpleasant symptom since. I gave it a small teaspoonful of castor oil to be sure to get an operation from the bowels, which operated freely. I have given five or six doses of one-third of a drop of tincture opii. The child sleeps and nurses well, the stitches are out, and the cord is separating nicely. How long after birth before the nerves of sensation are brought into action? They were certainly not in action when I performed this operation.

DISCUSSION ON BATTEY'S OPERATION.

DR. ROBERT REYBURN, in opening the discussion on the case of Battey's operation reported by Dr. Jos. Taber Johnson at the last meeting, stated that he was not one of those that underrated the achievements of abdominal surgery; on the contrary he was a firm advocate for the performance of operations upon this region of the body when absolutely necessary for the saving of the life of the patient, or for the removal of the ovaries when hopelessly and incurably diseased. The case reported (on examination of the ovaries removed) showed that it did not belong to either of these two classes, and hence was not a proper case for operation. In his opinion the cases properly and absolutely requiring this operation were very rare, and in an active practice of thirty-one years, he had never operated upon a case, nor had he seen one that he considered required it. He had, however, witnessed the operation a number of times and the results were, in his opinion, not at all satisfactory. Some of the patients, it is true, were cured, but in a great proportion of the cases the operation was either a failure or followed by periodical pelvic pains, attacks of neuralgia, etc., which rendered their condition as bad as before the operation. The technique of operations upon the abdomen had become so perfect, and the risks of the operation so diminished by the improved antiseptic methods, as to induce the performance of an immense number of operations that should never have been performed. In his experience the patients that desired the operation belonged to one of two classes, either obstinate cases of dysmenorrhœa, or, perhaps, of evil habits, and who required as much moral as medical treatment. He called attention to a paper by Dr. Coe, published in the *Medical Record*, of September 24, 1887. Dr. Coe states that he has known severe pelvic pains, neuralgia, flushings of face and other vaso-motor disturbances to occur at the time of the former menstrual period, and in these cases their condition was worse than before the operation. Two cases of violent congestive headache are continuing for three years after the operation. He believed that the operation was being performed far too frequently, and that it was time for the profession to call a halt and forbid such unnecessary operations.

DR. GODDING had come to the Society to learn and not to hear an experience that was practically *nil*. A woman, who had had her ovaries removed at the Pennsylvania Hospital for the Insane for recurrent mania, came under his care about one year after. She had previously been under his charge and not having improved she went to that hospital and her ovaries were removed. Success was apparent and she was removed from that institution. In a year's time the attacks of mania recurred with their former severity. There was no return of menstruation. She came under his care four or five times after this. It was near the menopause as she was 40 or 45 years old, but she kept on having the attacks. She would improve and leave the hospital, but would return in a month or two as bad as ever. The artificial menopause was produced and her general health improved.

Bearing on insanity: A young girl, about 12 or 13 years old, was under his care in 1876 and '77, for about eighteen months. Menstruation was not established. It was as pure a case of moral insanity as had ever come under his care. For sin and iniquity she took the lead; at times the attacks were aggravated; and she was always erotic. Restraint was used; anodynes and anesthetics were given; and all treatment seemed baffled. Every means of reformation was tried in vain; and the mother's use of the rod was fruitless. He lost sight of her. She was removed to the Worcester Hospital for the Chronic Insane, under Dr. Quimby, whose opinion coincided with his; and she was advised to go home on account of a great aversion to hospital treatment. The menstrual function appeared but she became worse. Finally she fell into Dr. Goldsmith's hands. At a meeting of the Superintendents of Institutions for the treatment of the Insane, Dr. Goldsmith read a valuable paper (*Journal of Insanity*, 1883) bearing on this case. Dr. H. R. Stohrer was invited to discuss the subject of Battey's operation and he recommended it in this case. It was performed and the girl resumed her natural, amiable disposition. A year after she was perfectly well. After such a result he felt anxious to hear from those present the changes wrought in menstrual conditions by the removal of the ovaries. Of course we must not be led astray by extreme cases. Several cases are on record of the removal of the testicles for nervous derangements.

DR. T. C. SMITH regretted that Dr. Reyburn had condemned the operation simply because it is sometimes performed unsuccessfully or unnecessarily in one class of cases. In other cases it is justifiable. A woman has dysmenorrhea for years and years; she goes from specialist to specialist without receiving any benefit; and after years of fruitless treatment she falls into the hands of the surgeon who has removed the ovaries in women similarly affected and is offered the hope of a cure. What would Dr. Reyburn do in such a case? How long would he wait? He has a case that will ultimately call for the removal of the ovaries. She became pregnant three months after marriage. She was suddenly seized with a pain in the left side and discovered a lump as large as a hen's egg. She called in a physician who suspected

an extra-uterine pregnancy, but she went to term. Six months ago he examined the same woman and found the left ovary the size of an egg and very painful. It does not yield to treatment. Is this a case for operation? The size does not demand it but the pain is increasing. Suppose Dr. Reyburn has a bleeding fibroid that has resisted all other treatment would he refuse to establish the menopause by removing the ovaries? Or suppose he has a pyosalpinx would he permit it to rupture? What would he do in such a case? He should be more explicit.

DR. REYBURN regretted that he had not been understood. He considers the first case mentioned by Dr. Godding a clear case of the abuse of the operation (?). A great many operations are performed when the disease does not threaten life. The ovaries are removed when there is no appreciable disease but only the evidence of a perverted function. If the woman were going about would he remove the ovaries simply because she had a pain in her side? No. Such is not a case for operation. If the disease goes on, yes. Loss of texture such as to endanger life, and bleeding tumors may justify the operation. It is not always justifiable in bleeding fibroids. Better dilate the uterus and remove the fibroid. Nowadays surgeons and gynecologists must have a few ovaries in their pockets to be fashionable.

DR. FRY asked, From the history of the case and the specimen presented was the operation justifiable? The speakers had confounded Tait's and Battey's operations. The former removed the tubes and ovaries for a pathological condition; and the latter simply to establish the menopause artificially without regard to disease of the organs themselves. At the last meeting of the American Gynecological Society, Dr. Polk expressed the opinion that the operation was not called for, Dr. Martin, of Berlin, cured his cases by other means, and Emmet let the ovaries alone. After Dr. Johnson had loosened the adhesions the operation should have ended and the abdominal wound have been stitched. If the operator finds healthy tubes and ovaries he is not justified in removing them. The question is whether these cases can be relieved by less violent means. In this case the operation was scarcely justifiable and Dr. J. should have been satisfied when he saw the ovaries were in such good condition with breaking up the adhesions and leaving them.

DR. KING: When the operation was first introduced the dangers were anticipated and stated. It is too frequently performed where it is not absolutely necessary; but we are all human and liable to err. Battey's operation has had its day as a fashionable surgical procedure. Years of practice and experience have enabled surgeons to formulate better rules for its performance than they had at the beginning. At the last meeting of the American Gynecological Society, Battey stated the results of his operations: some were not cured; some were only benefited a little; while the majority "bounded like an India-rubber ball, into health." Women hear of others being relieved and go from one surgeon to another until they find one willing to operate, and he probably removes the healthy ovaries. Dr. Polk opens the

abdomen, breaks up the adhesions and leaves the healthy ovaries. This is an advance and does not mutilate. Some are relieved by time. Sometime ago Dr. Johnson suggested Battey's operation in an old maid. She afterwards came under his care. It was near the menopause; he used Goodell's method of dilatation; and she had a delightful relief for two or three months at a time. The loss of the ovaries makes very little difference in those who do not contemplate matrimony; but these organs are of great consequence to poor women in whose family there is an entailed estate. The most interesting and important question of gynecology is the reason for women having such diseases, as cysts, as to call for such mutilating operations. Have we no means of prophylaxis?

DR. KLEIN-SCHMIDT: There is one interesting point raised by Dr. King. Why do women of this age have cysts and other diseases of the ovaries? They are not more frequent in this age but abdominal surgery has advanced so far that they are easily detected. The ancients found diseased ovaries but did not understand them. Hyrtl has a work on spaying women in which there is a case of a man spaying his daughter. Dr. Smith's first case should have received the galvanic treatment and if that failed preparatory laparotomy. Twenty years ago, in discussing ovariectomy, he remembers that Dr. King advanced the opinion that the time would come when we would be able to tell these growths with certainty. It is easier to operate at an early period of the disease. If the ovary in Dr. Smith's case is diseased let him find out what is the matter with it.

DR. BERMANN: The question raised by Dr. King is an important one. If the women of to-day suffer more than those of former times he thought it might be attributed to two causes, viz.: constipation and tight lacing.

DR. FRY had had a case under observation for six or seven years. The woman was 32 years old and one ovary was prolapsed into the cul-de-sac. He would put her into the knee-chest position, relieve the retroflexion and tampon the vagina. She was confined to the bed most of the time. She would get better and the treatment would be discontinued. She returned several months ago and he determined to try electricity. He has been using the galvanic current about two months, but has also used the packs. She has improved and the ovary is smaller, but he is not certain that the electricity is entitled to all the credit. He has considered removal of the ovaries but the woman's family oppose it. Cases sometimes die and if one were his he thought his conscience would bother him.

DR. JOHNSON had not intended to say anything as the members understood his opinion on this subject. His views have not changed. He has reflected on every case before he operated because he did not desire to be rash. He sees a great many cases but does not operate on half the women who desire to have their ovaries removed. In some respects he agrees with Dr. Reyburn, but would not take the same ground. The majority of women he sees are chronic sufferers and cannot be cured by the means

at hand. They go from doctor to doctor, undergoing various methods of treatment, but grow worse; everything fails and they are willing to run the risks of this operation. He might operate and the result might not be as good as he expected, or an absolute failure. Of course he had made a mistake but this should not lead him to abandon the operation, because mistakes are made in all branches of surgery, and yet they are considered perfectly justifiable. He does not recommend every ovary to be removed. Battey's operation is for the removal of the normal ovaries and was called normal ovariectomy. Battey operates to bring on the menopause and that was his motive in the case reported. It was a matter of dollars with poor women; many of them are bed-ridden for months and have tried all sorts of treatment without benefit and their only hope seems to be in the removal of the ovaries. He holds that the operation should not be performed until she has had all the advantages of general medicine. Give electricity a fair trial. He has received letters filled with grateful expressions from women he has operated on who are now enjoying excellent health. In a case Dr. Ober is now attending the woman was relieved for a time but is now growing worse. Perhaps the convulsions are due to a third ovary. Of the 54 cases presented by Dr. Battey, 33 were cured; 8 much improved; 5 a little improved; and 8 not at all improved. Of these 54 cases there was complete menopause in 50, and continued menstruation in 4. Tate removed the ovaries in 50 and produced the menopause in every case and cured them to. Dr. Godding's experience is *nil*; one case did well and the other is cured. He would remind Dr. Fry that Dr. Polk did not have everything his way in the discussion referred to. Dr. Goodell opposed two operations instead of one. Dr. Bantock agreed with Dr. Goodell that the alternative recommended by Dr. Polk was not the correct one. The operator does not desire to unsex the woman, the disease has already done that. He has a patient under observation at present who is sane for three weeks out of every four, but during her menstrual period she is a confirmed nymphomaniac and uses the most vulgar language. He is in doubt as to the proper course to pursue. Dr. Godding's successful case prompts him to operate. It is true Goodell's asylum patient died, but the hygiene of the institution may have been bad, and if she had been out she might have been cured. If the trouble seems to be connected with menstruation the proper procedure would seem to be to produce the menopause.

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, November 5, 1887.

THE PRESIDENT, S. POLLAK, M.D., IN THE CHAIR.

DR. T. F. PREWITT presented a case of
MULTIPLE TUMORS OF THE HEAD.

The case is of a gentleman whose head is covered with a number of tumors, some on the forehead, nose and lips being developed to a less degree. They

are extraordinary in many respects, and would tax the skill of many diagnosticians. He has had them for twenty five years. They have not impaired his health, but are merely annoying.

If there had been only one of these tumors, I would have been impressed with the idea that it was a sebaceous cyst, because it fluctuates distinctly. But I have excluded that. Then it occurred to me that possibly it was sarcoma; but the history is not that of sarcoma, which is of rapid growth, and primary sarcoma of the skin is a rare thing. And then looking at the development on the face and the character of the skin, which the gentlemen will notice is muddy, that condition which we so frequently see in young persons subject to affections of the sebaceous glands, it occurred to me that it was an adenomatous condition, that the glands of the skin were involved. But that was not entirely satisfactory to me; the tumors are very vascular and bleed quite freely. In one which I cut off I had to arrest the hemorrhage with pressure and applied the electrolytic needle. Professor Bremer and Dr. Rohling examined sections from it and pronounced it adeno-sarcoma. The great vascularity suggested to me that there was some sarcomatous degeneration, and I expressed myself to that effect. The next question is, what can be done? I propose to try electrolysis on some at least, and endeavor to get rid of them, even if reproduced. If it was a single tumor I would not hesitate to cut it out. One or two of them have been cut out, and he thinks they have not grown again, but they can be seen to be growing at the base of the cicatrix. He does not know how they first came. He is 52 years old.

DR. A. H. OHMANN-DUSMENIL: The disease is not one, because we have in the lower part tubercles, and in the upper part masses undergoing cystic degeneration, or through pressure the skin becoming very thin. I don't think it fair to ask a diagnosis without giving a specimen for examination. Some look like lipomata, others like fibromata, whilst others have some hardened matter, which may be inspissated sebum or calcareous degeneration of the tissues. It is not a pure case of fibroma of the skin, as that is generally multiple, and more or less pedunculated. Nor is it lipoma or lymphangioma, which the lower portion simulates. I do not remember a similar case. There is involvement of the subcutaneous connective tissue.

DR. E. H. GREGORY: We understand that these tumors are not growing; therefore these masses are wanting in one of the essentials of a tumor, namely, indefinite and continuous growth. We do not recognize any overgrowing mass as a tumor unless it grows continuously, indefinitely, and whenever a mass comes under our observation that has existed for months without any material change in its bulk, it becomes a question whether it is a typical tumor or not. If we are looking for a cause of these masses, I would attribute it to a vegetable parasite, or some agency of irritation, and I would place it in that class of diseases, the so-called granulomata. As for adeno-sarcoma, that means nothing more than overgrowth of the glands of the skin and its connective

tissues, involving perhaps more than one element of the skin. The question is, is it an overgrowth after the method of a tumor, or an overgrowth from irritation? We would place it among the latter.

DR. F. J. LUTZ reported a case of

GUNSHOT WOUND OF THE INTESTINE.

The case occurred last Saturday night. A man, æt. 30, was shot by another with a revolver carrying a 38-calibre bullet, the ball entering $\frac{3}{4}$ inch below the umbilicus in the median line. He was taken to the City Hospital. The abdomen was distended considerably, there was resonance over the liver, indicating that gas was in the peritoneal cavity; a long probe entered the cavity in a downward, outward and backward direction to the right. There was considerable pain. On opening the cavity, we found that very little of the contents of the bowel were in the peritoneal space, as the intestines were empty. The jejunum had six openings in it, and the ileum two. The mesentery was cut in two places, and the parietal layer of the peritoneum covering the posterior side of the cavity to the right of the common iliac artery had a rent in it which was the beginning of an opening which ran down toward the ileum. The openings in the bowel were united with silk (iron-dyed) sutures, and the others with catgut sutures. The opening of the ileum being so near the mesentery, I concluded that the continuous suture going clear around the bowel would be the most rapid and equally as safe a method of suturing it. The bullet was not extracted ante-mortem. No large blood vessel was wounded. The patient died. The openings which had been sewed I found perfectly water tight at the autopsy. This is another illustration of what I have endeavored to express on several occasions, that penetrating wounds of the abdomen should be treated with free opening. One point in the technique is that the long continuous exposure of the intestines to the air is no mean factor in determining the fatal issue of the cases. Perhaps it would be more perfect if some means could be invented to keep the intestines at a proper temperature—and it is necessary to expose them well in order to sew up a rent in them—and the ordinary cloths wrung out in hot water cool so rapidly that they have hardly any influence in keeping a proper temperature. In this case we irrigated the cavity with hot water. Whilst the proportion of recoveries after this operation is small, still it is large enough to favor its performance.

DR. LUTZ also reported a case of

TRAUMATIC PERITONITIS.

The patient was kicked six weeks ago in the left groin, by a cow, and as a result the glands of the groin inflamed and suppurated, and I removed a nest of them. I removed those on the line below Poupert's ligament. Subsequently several of the glands high up inflamed. I made an incision and cleaned out the cavity and united the two incisions by a drainage-tube. The man's general condition was bad. He seemed anæmic, had chills, but never complained of trouble in the abdomen until two days before death, nor was the abdomen distended.

He was not under the influence of opium. A day and a half before death he had a chill and high fever, his abdomen became distended, very painful, and he went into a comatose condition, and died 36 hours after I first observed that the peritoneum was involved. On opening the cadaver I found a typical case of peritonitis, septic, coils of the intestine glued together with exudate, and a small hole half the thickness of a pencil; ulceration had taken place through the wall of the abdomen, so that if laparotomy had been performed in this case, and the cavity thoroughly cleansed, I think his chances would have been better.

DR. LUTZ also reported a case of

LAPAROTOMY FOR TYPHILITIS.

The man came into the hospital on Tuesday; he had a tumor in the right iliac region, about as large as an ordinary fist. He had had it for several months and it was very painful and tender. We had him in the clinic on Wednesday, and after he left it peritonitis set up, which increased and became violent thereafter. This morning there was stercoraceous vomiting. The pulse had been 115 and full, but this morning it was 100 and full. There was a tumor in the side, dulness extending to the right inguinal region. On opening it an immense quantity of pus escaped, pus of a fecal odor. The coils of the jejunum and ileum were matted together by exudation, and on the right side the omentum was so firmly bound down in the neighborhood of the internal ring of the inguinal canal that when I felt with the fingers and found a cavity that contained pus, and this was so firmly adherent, I thought that there was in addition a strangulated hernia. However, I could pull it out readily, and we washed it with a flush of hot water. We found a knuckle that was the point strangulated, a part of the gut bent on itself and united by exudations, and glued to the anterior abdominal wall in front of the bladder. There was considerable bleeding, caused by the separation of the intestines necessary to find the strangulated portion. The patient died, as we expected. I believe it was one of those cases in which an early operation would have given him some chance. If it was a perityphlitic abscess at first, a lumbar incision might have saved him. Perhaps these operations are not triumphs of the surgical art, but they teach valuable lessons. The first the lack of proper appreciation of the surroundings of the case, the lack of masterly inactivity. The third indicates that early incisions should be made to prevent complications such as came up in this case.

DR. E. H. GREGORY: What were the symptoms presented by the first case before the operation?

DR. LUTZ: His circulation was good, pulse was strong, temperature good; the abdomen was distended, then—which to me was the best indication of what should be done—the probe passed to such a distance into the peritoneal cavity. There was no fecal matter in the abdominal cavity.

DR. GREGORY: And there was no hemorrhage in the cavity? Here are three important points. I am an advocate of the operation, but I have never cut

loose from the traditions of the profession. I am a link between the two methods. The more I see of the inside of men's bellies in these cases, the more I am disposed to hesitate about opening them. Every case says to me, "go slow." This case had a good pulse, good temperature, and there were no urgent symptoms. But there was a penetrating wound. A penetrating wound of the belly is not a warrant for laparotomy. When there are urgent symptoms that declare that the patient cannot be worsted by the operation, symptoms that make us feel that he will not recover; he has intense pain, vomiting, symptoms that look towards collapse, we should operate. But if the man has a good temperature and pulse, and a penetrating wound of the abdomen, with my limited observation, I should hesitate; I should wait. I have long been impressed with the belief that the simple fact that the intestine is wounded does not carry with it the absolute certainty of extravasation. From actual sight, it is known that many wounds of the intestines heal without extravasation—wounds that you can put your finger in. A wound that is necessarily fatal will be attended with symptoms.

DR. LUTZ: Of course no one has greater admiration for any view Dr. Gregory may express than I. However, there seems to be a radical difference of opinion in this case. Never, in a case of penetrating wound of the abdomen with the symptoms that Dr. Gregory indicated, should a surgeon perform laparotomy, because the patient is going to die anyhow; he has septic peritonitis. I don't believe that people recover that have extravasation, the result of gunshot wounds of the intestines. I have yet to see on the post-mortem table a gunshot wound of the intestine that is agglutinated and shut up. On the contrary, I find fecal matter, inflammation, etc. The best possible condition for the recovery from any operation is that the patient is in the best physical condition, pulse and temperature good, before the changes that necessarily result in death have had an opportunity to begin, before fecal matter has had time to be carried across the peritoneal membrane. The time is unquestionably then, when the wound is first inflicted. Again, the mere performance of laparotomy after an incised wound does not imply more than an explorative incision. If a man has a simple wound of the abdominal parietes, whether it penetrates or not—as I have seen in a case in which there were no symptoms, when the wound was enlarged, a knuckle of the intestine or a piece of omentum was in the wound, the internal end of which was four times as large as the external one. The simple enlargement of the wound does not add gravity to the case, but it does that which is of the utmost importance—it enables the surgeon to approximate the peritoneum, to sew up a rent in the bowel, or ligature a blood vessel. If we wait until the urgent symptoms appear, there is no use in performing laparotomy; allow him to die in peace. I would like to ask Dr. Gregory in how many cases of gunshot wounds of the abdomen he has seen the intestines escape? I have never, in perhaps twenty laparotomies which I have made for gunshot wounds of the abdomen, once seen the intestine escape.

DR. A. H. MEISENBACH: I was present at the operation. The urgent symptoms that Dr. Gregory has described were not present, yet the history of the way in which the wound was received, the caliber of the wound and the direction of the bullet, and an opinion based on the facts and teachings of experimental surgery by Senn, Parkes and others in relation to the proper course to be pursued in gunshot wounds, indicated that this was certainly one of those cases in which to perform laparotomy. If the lesion had not been so severe this would have been one of the best subjects for recovery; but as the operation demonstrated, the lesions were so severe that he would ultimately have succumbed. The case presented several interesting points, one of which was one that Dr. Parkes called attention to, in regard to different missiles moving at different speeds, and character of wounds they produce. The wounds nearest the skin were clean-cut wounds. Those near the right wing of the ilium were ragged ones, one or two in which peritoneum and muscularis were entirely torn away, leaving a valve like opening in the mucous membrane. It seemed impossible that with such injuries the patient could recover without having those wounds closed up. The amount of extravasation must have been very little; the bleeding was very little. The danger generally is not from arterial, but from venous hæmorrhage, that occurs from the mesenteric veins.

In regard to the technique, the length of time is, of course, one of the prime factors that influence the result. In this case the patient was on the table from 11:30 P.M. to almost 3 o'clock in the morning, because the search for, and closure of, the wounds was necessarily very tedious. The continuous suture fulfils everything that is demanded of it, and closes the opening so that nothing will exude, can be more rapidly applied than the Lembert or its modifications, and any one can demonstrate this in an animal. The continuous suture is one that can be easily adjusted; it is the ordinary glover's suture. Anyone that has tried it knows how tedious the Lembert suture is. In a wound of one inch it takes from four to six stitches to close it; and with the hands smeared with blood, the tying of the suture is a difficult operation. The continuous suture of the bowel answers every indication; and even in circular section of the bowel, it can be adjusted in such a way that the bowel can be brought together without injury. Experiments have shown that it takes a very short while for the plastic exudation to close up the holes from which extravasation may take place.

DR. SPENCER GRAVES: It seems to me that there are certain symptoms that would tell us in the majority of cases, whether there is a wound of the intestines or not. The tympanitic resonance, the character of the pulse and the shock—but this is not always a result—I think would determine almost positively in the majority of cases. When there are several wounds of the bowel near together, it is a question whether it would be better to resect the intestine, or to close the several openings. In New York last year, I saw a case operated on by Dr. Bull; he removed sixteen inches of the intestines, and the patient made a perfect recovery.

DR. H. C. FAIRBROTHER: I have recently seen two cases of gunshot wound of the abdomen, and the symptoms were identical. The wounds were in the same place, being one and a half inches below the umbilicus, both cases resulting from shots at short range from revolvers of 32 caliber. In both cases the penetration had a downward course. In both the pulse was good, there was little, if any collapse. There was no great pain, no marked symptoms of general disturbance of the circulation. In one of these cases no operation was performed, perfect rest was maintained, the abdominal surface was covered with warm carbolized applications and recovery ensued. In the other case an operation was performed, three penetrating wounds of the small intestine were found and united, and the patient died. I don't know whether there were penetrating wounds in the first case or not, but the bullet was of a similar size and force and direction.

DR. PREWITT: I have listened with a great deal of interest to the discussion, and I think it is a fortunate thing we have a man like Dr. Gregory, who stands a little in the breach, because abdominal surgery is a new field, and rules in relation to it are not certain yet. Yet with the experience in gunshot wounds there seems to be not much room left for any other procedure. It must be remembered that the course of bullets is very eccentric, and many bullets that strike the walls do not penetrate the cavity, and the patients get well, when it is supposed that they have gunshot wounds of the bowel. I saw a little boy who was shot a little to the right of the umbilicus, and he walked home. I made a little exploration with the probe. He declared that the bullet dropped out and I let him alone and he got well. Such might have been the case in that of Dr. Fairbrother. In the statistics of the late war, Dr. Otis has shown that not a single, solitary case of gunshot wound of the intestine ever got well. Some cases in which it was presumed that the cavity was entered got well, but not where it was certain that such was the case. Of course if we find fecal matter, it is irrefragable proof of the perforation. But we have cases where there is a wound of the intestines, and yet there is so little evidence, so far as shock is concerned and the absence of meteorism, that it would be impossible to say that there was a wound of the intestine if we would wait for symptoms. If Dr. Fairbrother could kill his patient and examine that abdomen, and demonstrate that there has been a perforation of the intestines, and find that they had healed, it would be one of the grandest achievements of the day. Until that is determined, we must accept it as a rule, that patients do not recover after gunshot wounds of the bowel. It is not so absolutely fatal in gunshot wounds of the large intestine. Where the symptoms that are to be relied upon as positive evidence of perforation of the bowel were present, the patients have always died. It doesn't require to open the abdomen to know this; the proper course is to enlarge the external wound and determine the fact prior to any laparotomy. It must be done within five hours after the infliction of the wound; after this, there is a degree

of congestion that indicates septic peritonitis, consequently, you have to deal with a condition which is most unfavorable. So far as inferior animals are concerned, quite a number of cases have recovered where the intestines were injured, but this is not a criterion, because they will stand more than human beings. In regard to the closure of wounds, Dr. Parkes has shown that it is better to resect a portion of the intestines than to close a number of wounds. The modified Lembert stitch can be done as rapidly as the ordinary whip-stitch, and is quite as effectual.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, September 24, 1887.

THE PRESIDENT, CHARLES WARRINGTON EARLE, M.D., in the CHAIR.

DR. J. H. ETHERIDGE read a paper entitled:

VAGINAL HYSTERECTOMY; REPORT OF THREE CASES.

(See THE JOURNAL, December 24, 1887.)

DR. CHRISTIAN FENGER made some remarks on

CARCINOMA OF THE CERVIX.

The first specimen was from a woman about 40 years of age, a multipara. She had had symptoms for over a year, and was in rather an emaciated condition, partly on account of chronic bronchitis and a cystic goitre, and partly on account of the carcinoma, where several local operations had been done before. It is a cervix carcinoma, with the cervix involved almost to the internal os, the white mass here below being the carcinoma tissue, and all the rest of the cervix being carcinomatous. The only thing that induced me to operate in this case was the extreme movability of the uterus. As a rule, in carcinomata that have gone as far as this, I do not think operation is advisable; I think it is too late. However, she was not asked by me to be operated upon, but she implored me to operate on her at any risk to her life, and I operated. Before the operation her pulse was 120, and she was, as I stated before, weak, but the uterus was movable and was taken out without any considerable difficulties. Before the end of the operation, which lasted about two hours, she was very weak and almost pulseless. This condition lasted after the operation during the afternoon, and in the evening her pulse was 170 and scarcely countable. She did not lose any quantity of blood to speak of. I made a saline infusion of 12 or 13 ounces into the brachial vein, afterwards the pulse got stronger, and continued so from that time, and there was no further trouble during her recovery.

The next specimen is a portio carcinoma extending about an inch into the cervix on the posterior lip. It is a portio carcinoma because it has the greatest extent down at the vaginal portion, and becomes smaller and smaller as it goes up in the cervix. If we have a cervix carcinoma that opens down in the vaginal portion, we should expect to have a larger cavity in the cervix and a smaller opening in

the vaginal portion. This patient was 28 years old, and in spite of her being a nullipara the operation was very easy. I had here, as in all of the cases, to dilate the vagina posteriorly, but otherwise, evidently on account of the small size of the uterus, the operation was easy—so easy that there was no cause for either ante- or retroversion while taking it out; it was just held down, and the ligaments ligated. In this case the operation was so easy that I united the peritoneal as well as the vaginal wound, closed them up together with a row of sutures, commencing in the anterior fornix, going through the anterior peritoneum, the posterior peritoneum, and out of the posterior fornix, thus closing up by one row of sutures the peritoneal and the vaginal wound. In the other case, I closed the peritoneal wound and left the vaginal wound open. The drainage used was iodoform gauze. She made the most undisturbed recovery of all of them; never had a rise of temperature nor of pulse, and never had any pain. The tubes and ovaries were not removed.

The third case is a small portio carcinoma, extending but slightly up in the cervix, and can be seen on the posterior surface of the uterus. She had previously had perimetritis. This uterus was perfectly movable, but the operation was not easy, as the loosening of the bladder from the uterus was difficult, while in the first two cases it was easily detached with the finger. But here, perhaps on account of the previous perimetritis, the tissue between the bladder and uterus was so dense that it had to be cut with the scissors, and I made a small opening into the bladder, which was united at the time it was cut, and did not leave any bad results, not even a temporary fistula, as no urine passed at any time down into the vagina. Her recovery was uninterrupted.

The fourth specimen is another portio carcinoma on the posterior lip, reaching up in the cervix perhaps half an inch. The patient was a multipara, 28 years old, and quite fleshy. Contrary to my expectations, the operation was extremely difficult. The vagina was not unusually narrow, but I think the difficulty of the operation was due partly to the large size of the uterus, and partly on account of the fact that she was very fleshy. I think that in a very fleshy person there is some little part of the vagina narrowed by the subcutaneous tissue on the inside of the nates. There was here the same difficulty as in the previous one about separating the bladder from the uterus, which, however, has not given rise to any passage of urine into the vagina. I operated according to the method of Leopold, loosening the lower part of the broad ligaments first, and then going up until there are no firm bands left on the sides of the uterus. When that is done, and the anterior fornix loosened, as a rule the uterus becomes so movable that it comes down an inch or an inch and a half or two inches into the vulva, so that the rest of the operation is comparatively easy. But in this case it did not come down. There was an unyielding condition of the lateral ligaments. What the reason was I do not know. Of course, this condition made the operation difficult and long, so that at the end of the operation I did not care to lose time in uniting the

peritoneal or the vaginal wound, but only brought down the ligatures to the borders of the vaginal incision, uniting them here and leaving the peritoneal cavity open, using for drainage iodoform gauze packed up in the peritoneal cavity. This patient did not have an uninterrupted recovery. She had a temperature for a couple of days of about 101.5°, later on 100° now it is down below 100°. But what alarmed me more than the temperature was that the pulse was up in the neighborhood of 120 all the time, until now it has finally gone down. In this case I had to change the gauze packing at the beginning of the rise of temperature, taking it out and introducing a drainage-tube so as to be able to wash it out every day; the washing out, however, not being trusted until after the tenth day, because at least one, perhaps more cases are on record where, when the washing out was performed early, the fluid has gone up into the peritoneal cavity and caused general infection.

DR. MERRIMAN: Do you think that if you had sewed up the cavity of the peritoneum you would have saved her much?

DR. FENGER: I must confess that I believe in closing the peritoneal wound as a matter of safety. The specimens here show one point, namely, that a strict line, as Ruge and Veit have pointed out, between portio carcinomata and cervix carcinomata does not exist. They say that a portio carcinoma very rarely extends up into the cervix. If that is the case it would, of course, not be justifiable, in many cases of simple portio carcinoma, to do anything but the partial operation. Fritsch has called attention to a fact which these specimens show very distinctly: that is, the difficulty of finding out if a portio carcinoma is limited to the portio proper or extends up into the cervix, or even into the cavity of the corpus.

I might say a few words in regard to the manner of operating. It is very far from being generally agreed upon which operation is the best, and the variety of procedures is very large. As an illustration, we will take the treatment of the broad ligament and the closing of the vaginal and peritoneal wound. I think there has been an improvement in the technique of operating over the old methods in operating as proposed by Singer and Fritsch. They begin the operation by the ligaturing step by step of the parametria. When that is done well on both sides, the uterus will become so movable that the remainder of the operation can be done with comparative ease. This ligaturing step by step, together with Martin's method of suturing, does away with one of the dangers of the operation, namely: hemorrhage. By this step ligaturing the uterine artery is met half or three-quarters of an inch above the fornix, and can be securely ligated, so that the rest of the operation can be done with comparatively little loss of blood. The other danger which we have to encounter is sepsis, as we have to do with a carcinoma, whose surface is always decomposed and septic. Besides doing the usual and necessary clean operating, Leopold proposes that we should not anteverte or retrovert the uterus, but take it out without any of these procedures. Fritsch advises to leave the posterior

fornix closed when we anteverte, so that the carcinomatous surface cannot be turned up into the peritoneal cavity, and come in contact with the organs there.

As to the treatment of the peritoneal and vaginal wound, there is also a great variety of methods. It seems that for after-treatment packing with iodoform gauze is much more convenient and much less troublesome than a drainage-tube, as the iodoform gauze can be left in for a week or more without being removed, and then the after treatment is over.

DR. NELSON: I would like to ask Dr. Fenger, in regard to the removal of the ovaries and tubes, whether they are likely to produce disagreeable results in the after-history of the patient by being retained? I can understand full well the desirability of leaving as many organs and as much tissue as can be left, but would raise the question of the desirability or not of removal of the ovaries and tubes when the uterus has been removed.

DR. FENGER: In answer to that question, I would say that it is remarkable what little trouble has been reported from the cases where the ovaries and tubes have been left. There are a few cases, one of Schröder's, where the menstrual mola from the organs left has caused the patient trouble. In another case, the ovary or a piece of it which had been left was imbedded in the cicatrix, and caused afterwards, according to the opinion of the operator, periodical pains. Brennecke says that he has come to the conclusion that it does not do any harm to leave the ovaries and tubes in. He says that the ovaries atrophy, that some of his patients have had slight mola in the first three to six to nine months after the operation, and after that time the symptoms from the ovaries have always entirely ceased. That is all I know about this question. But as we get towards the end of the operation it is hard on the patient and hard on the operator, and I feel like doing as little additional operating as possible, and if I can leave the ovaries and tubes without doing the patient any harm I prefer to do so, as the operation is in many cases a severe one on account of the liability of the patient to collapse towards the end of the operation, which lasts for an hour and a half to two hours. So until I can do the operation much quicker I should prefer to leave the ovaries and tubes in.

DR. MERRIMAN: Is there any danger of including the ureter in this operation, of injuring it in any way?

DR. FENGER: Yes; there is danger, inasmuch as it has been done, although very rarely. When the ligaturing of the broad ligaments has been done step by step so that the uterus can be drawn down, then the ureter stays up, so that the final ligature of the broad ligaments is not likely to include the ureter.

DR. MERRIMAN: But in this method that has been spoken of as Martin's, would there not be more danger when the bladder is not loosened?

DR. FENGER: Martin ligates step by step, the parametria first; consequently he gets the uterus further down.

DR. MERRIMAN: He draws the bladder down with it, the uterus and bladder not being disconnected, and I should think there would be great dan-

ger of including the ureter in some of the operations.

DR. FENGER: Even if the ureter is caught with the bladder when the uterus is made movable and drawn down, the ureters stay up.

DR. NELSON: Is it customary with the majority of operators to curette and thoroughly disinfect the carcinomatous ulcer before beginning the operation, immediately before, or is it done several days before, or is it done at all?

DR. FENGER: I think it is done several days before by some, for instance by Hegar and some others. Fritsch and Leopold do it at the beginning of the operation. After the curetting, the surface is disinfected by a strong solution of chloride of zinc or a strong carbolic acid solution. I prefer to postpone it to the beginning of the operation so as not to have the patient disturbed with an additional operation, with some loss of blood.

DR. MERRIMAN: Supposing there was a case of cancer that had gone beyond the cervix into the tissue posterior to the uterus, invading the vagina and extending along down on the arterial side, but there was nothing anterior to the uterus, would it be safe in a case of that kind to undertake the operation of extirpation?

DR. FENGER: I think I should refuse. I think the benefit to the patient lies in operating early, and as soon as a portio carcinoma has gone over on to the wall of the vagina to any extent, I think the prospects of a radical cure are very small, and that the patient is just as well off with symptomatic treatment, curetting, etc. I think the aim of the operation should be a radical cure, and that extensive operating is being done away with more and more, and only limited cases regarded fit for operation.

Has the vaginal hysterectomy become less dangerous since its revival by Czerny in 1879? The mortality from the operation for the first five years up to 1884 has been given by Mundé to be 28 per cent. In a paper read before the Amer. Gynecological Association in 1884, he tabulated all the cases to be found in the literature from Europe as well as the United States; the operations amounted to 255 with 72 deaths = 28 per cent. For the operations of the year of 1885, recorded in Virchow Hirsch's *Jahresbericht*, 1886, the mortality is already considerably lower. I find reports from 32 operators. In all 106 cases with 17 deaths, or 16 per cent. A. Martin reports, in his work of 1887, 66 cases with 11 deaths = 16.6 per cent. Special reports from individual operators in the last year show even more favorable results.

Thus we find reported by Klotz, 17 cases, no deaths; Gaillard Thomas, 15 cases, no deaths.

Most valuable, however, are, on account of the larger number of cases, the recent reports from Fritsch and Leopold: Fritsch reports 60 cases with 7 deaths, 10.1 per cent; Leopold reports 48 cases with 3 deaths, 6.2 per cent. mortality.

The reports of both last named operators include all of their operations from 1883 to 1887. Leopold's mortality of 6 per cent. is the lowest yet recorded for a larger number of cases. Every operator has, undoubtedly, in the beginning of his work in this

line, operated on cases that were too far advanced for a reasonable hope of permanent eradication of the disease. The more recent the origin of the tumor, and consequently the more limited the extent of the growth, the better are the prospects, as well the immediate as the remote, for the patient. If then, in future, the cases for operation are properly selected, we can expect that the mortality will reach a reasonably low figure, and I think we must agree with Fritsch in the following statements (p. 385, l. c.): "I have no doubt that in a near future the mortality in general will come down to 3 or 4 per cent."

It certainly seems remarkable, and far surpassing the expectations with which this operation, less than ten years ago, was reintroduced in surgery, that in so short a time its mortality should come down to almost the same point as in laparotomy for ovarian tumors. Ovariectomy needed a much longer series of years to reach the point of safety, it possesses now. Vaginal hysterectomy for carcinoma can be said now to be not more dangerous than the extirpation of a carcinomatous mamma with removal of the axillary glands, for which operation Billroth¹ gives a mortality of 10.5 per cent. Schmid, from Kuster's Hospital (Auguste Hospital, Berlin), 5.2 per cent.

Are the partial operations on the carcinomatous uterus, provided they permit of effective removal of the tumor, preferable as being much less dangerous than the total extirpation?

Pawlick² reports a large series of partial galvano-caustic operations from Brown's Klinik in Vienna.

137 cases had 10 deaths = 7.2 per cent., from immediate effects of the operations.

In 12 of the cases of recovery, late hæmorrhages of a severe character were observed.

Schröder³ reports 105 vaginal amputations of vaginal portion and cervix with 13 deaths from sepsis = 12.3 per cent. Wallace⁴ reports 10 cases with 2 deaths = 20 per cent. Gussersow⁵ has 33 cases with 3 deaths = 9 per cent.

We can thus conclude that, if the mortality of total hysterectomy is in the neighborhood of 10 per cent., the operation is not much more dangerous than the partial vaginal operations.⁶ A much larger field than hitherto will undoubtedly be accorded to the operation. It is, in many cases, almost impossible to determine how far up into the walls of the uterus the carcinoma tissue extends. Even with a mortality of 25 per cent. for the total extirpation, Gussersow, in doubtful cases, will prefer this operation to the partial operations, and he states in this connection as follows: "The safer total extirpation becomes, the more it will take the place of the vaginal amputation of the cervix."

A much cited case of Binswanger is of importance in our choice of operation. He found a perfectly isolated portio carcinoma, accompanied by an also isolated carcinomatous degeneration of the mucous

¹ Billroth, *Krankheiten der Brustdrüsen*, p. 155. Deutsche Chirurgie, 41.

² Wiener Klinik, 1884, vii, 4.

³ *Krankheiten der weiblichen Sexualorgane*, 1884.

⁴ Brit. Med. Journal, September 18, 1883.

⁵ *Neubildungen des Uterus*, 1885, p. 233.

⁶ Schatz, 1883. The danger of the high vaginal amputation does not seem to be much smaller than that of the total extirpation.

membrane of the fundus. It is generally accepted as a law in the surgery of the mammary gland, that how localized a small carcinomatous nodule may be, nothing less than the removal of the entire gland, and I regard it safe to add the lymphatics of the axilla, would be the safe operative procedure to adopt. It can thus be understood that authors who believe in a low mortality for the vaginal hysterectomy—Sänger, Leopold, Fritsch—require this operation to be done in all cases of limited carcinomas, even small carcinomas of the vaginal portion, to the exclusion of any of the partial operations.

Fritsch calls attention to the fact that a strict demarcation line between carcinoma of the cervix and of the vaginal portion, as Ruge and Veit in their classical article on uterine carcinomas have described it, does not exist in all cases. Some apparent portio carcinomas extend deeply up into the cervix. It is often not possible during a partial operation, viz., vaginal amputation of the cervix, to determine if we amputate in healthy tissue.

Consequently, for the majority of such cases the total extirpation is safer as to radical cure of the carcinoma than a partial operation.

DR. H. T. BYFORD: I had the good fortune to successfully operate upon one case in which the uterus looked something like this larger one Professor Fenger has shown us. It was probably an inch longer. The patient was a fleshy married lady, about 30 years old. The cervix had been amputated a few months before. I ligated the broad ligaments step by step, as recommended by Leopold. I left the abdominal cavity open except to draw the ligatured parts together, and then packed the vagina with iodoform gauze for eight days. By mistake one of the iodoform tampons was left in nearly two weeks, but it did not cause any serious symptoms. As to leaving the peritoneal cavity open, I think there never will be a cast-iron rule, for that will probably have to be decided by the case. If the case was one in which there was much manipulation of the broad ligaments we would expect some sero-sanguinous exudation, and should not completely close the peritoneal cavity. When we use iodoform gauze in the proper shape we practically close it up. I do not see the use of sutures. Before there can be any decomposition of secretions, the peritoneal cavity is closed by exudation. Stitches, are only a source of irritation, both during and after the placement. As to leaving the ovaries, it seems to me that in taking out the uterus we take out the larger portion of the sexual nervous system and produce atrophy of the sexual organs quicker by removing the uterus than by removing the ovaries. It would be almost as superfluous to remove the ovaries after taking out the uterus as to remove the uterus after taking out the ovaries to bring on the menopause. There is one kind of operation which has not been referred to, that is by leaving compression forceps on the stumps, as is done quite extensively in France and England. When the patient is very weak it seems to me an improvement to put on these clamps and thus rapidly finish the operation. In regard to the mortality and difficulty of the operation, I think

that taking out the uterus is not so very much more serious, although much more difficult, than amputating the cervix. It cannot be so safely done so often by the inexperienced operator, for he is more liable to do something that will endanger the life of his patient. But when the operation is properly performed, the peritoneal cavity practically closed by the parts being brought together, the patient is left in as good condition for recovery as by a high amputation combined with the cautery.

DR. J. C. HOAG: I have observed with a good deal of interest an apparent revulsion in feeling and opinion with regard to the advisability of this operation. Only a few months ago, in conversation with a number of operators in England I found the operation was very generally decried, but since that time, from a perusal of the English journals, one gets a different idea of the opinion of the British operators. Some of them did not hesitate to say that in those cases which recovered there was no carcinoma. In regard to the technique of the operation, I can only speak in the light of what experience I have had in practice on the cadaver, under the instruction of a prominent operator. I was instructed to begin the operation by opening the anterior and posterior cul-de-sac. This certainly seems to be an inferior method to the one one described by Dr. Fenger, as affording opportunity for infection of the peritoneum. It has one advantage, however, and that is, it enables one to get his bearings better in regard to the relation of the parts, because one can surround the broad ligaments with the finger and find just where to pass the ligatures, and in this way I think the ligatures can be put in in a more accurate manner. The loss of blood is less, and after the removal of the uterus there is no trouble whatever from hemorrhage because it is entirely prevented by the accurately applied ligatures, whereas in the other methods there is often a considerable loss of blood. In a number of cases which I saw the operation was practically bloodless.

(To be concluded.)

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Semi-Annual Conversational Meeting.

THE PRESIDENT, F. P. HENRY, M.D., IN THE CHAIR.

DR. W. T. COUNCILMAN, of Baltimore, delivered an address on

SOME FURTHER INVESTIGATIONS ON THE MALARIAL GERM OF LAVARAN.

This organism, first described by Lavarán, has been met with in every case of malarial fever which the writer has met with. The organism is in high degree polymorphous, and ten tolerably distinct forms may be found in the blood. Some of these evidently represent different stages of development, and the connection between them is obvious. Others present such marked differences in form that no connection between them can be made out. Some of the forms are only four d outside of the red corpuscles, and others are found free in the blood. They are: 1. Non-pigmented small amoeba-like bodies in-

side the red corpuscles; 2. pigmented bodies larger than No. 1, also in red corpuscles; 3. pigmented bodies about the size of red corpuscles; 4. segmenting forms of the No. 3 body; 5. small hyaline bodies, which are formed by this segmentation; 6. a crescent-shaped body with pigment in the centre, the horns of the crescent being often connected by a fine line; 7. round or oval bodies which differ from No. 6 in shape only; 8. a pigmented body provided with numerous long, actively moving flagellae; 9. actively moving free flagelle, which are evidently derived from No. 8; 10. a pigmented body with an active undulatory movement of its periphery. The first five forms are found only in intermittent fever, No. 4 only being seen in the blood during the chill period, and its presence is invariably connected with the chill; Nos. 6 and 7 are found in cases of malarial cachexia.

The most interesting forms, and about whose parasitic nature there can be no doubt, are the bodies Nos. 8 and 9. These are generally absent in blood taken from the finger, but they may be found in any type of the disease. They are the only forms of the organism whose presence in the blood is not associated with a special type of the disease. They were found, however, in fifteen out of the twenty cases in which the blood of the spleen was examined. Of these twenty cases twelve were cases of malarial cachexia, and eight of intermittent fever. In the twelve they were found ten times and in the eight cases of intermittent five times. From this it seems probable that Lavarán was right in considering the flagellate organism the most important form of the parasite. The influence of quinine on the intracorpuscular forms of the parasite is most marked. Doses of 15 grs. t. i. d. for two days in succession were found sufficient to cause them to disappear. The effects of the quinine were not so apparent in the other forms. The crescents were apparently not diminished in number in one individual after he had taken 45 grs. of quinine daily for seven days, and 60 grs. daily for four days.

DR. WM. OSLER said the thought which had struck him most forcibly, in looking over this subject, was the almost perfect unanimity which has prevailed among the different observers as to the appearance of these organisms. With the sole exception of the segmented form (No. 4), Lavarán and the early observers had described them all. His own observations, since the communication he had presented to the Society last year, had been somewhat limited. He had, however, made a series of observations upon the blood of fishes and birds, since it had been stated that bodies resembling Nos. 1, 2 and 3 had been found in the blood of carp and some water-fowl. Prof. Baird had offered him facilities for this work at Wood's Hall, and had kindly furnished him with forty five carp. He had failed to detect any such organisms in the blood of these. In the blood of a goose sent him from Ontario he had found one or two pigmented bodies. It had been been stated by Dr. McCallum, who sent him the goose, that the bird had malaria. However, the bodies were not numerous, nor was the temperature of the goose ele-

vated, nor, so far as he could make out, had it chills. Dr. Councilman had not figured one body that is very peculiar indeed, namely, a solid body in the centre of a clear space. It stains like a microorganism, varies in size, and although the body itself does not change in form, yet there are sometimes changes in outline in the clear space surrounding it. They were somewhat abundant in one case only.

One other point with regard to the clear bodies (No. 1): In five or six instances he had seen such bodies pass out from the corpuscle, remaining out and undergoing no further change of form. He was not altogether prepared to say what was the relationship of these bodies to the other bodies described. It has been claimed that similar changes can be obtained by special methods of treating the blood. The most important question is first to determine the relationship of the hyaline to the pigmented bodies, and the possibility that the hyaline may not be directly associated with them. He was convinced that the pigmented and segmented bodies were merely different stages. He could fully confirm what Dr. Councilman said with regard to the crescents. They are most peculiar and interesting bodies, occurring in the chronic cases and in those in which there had been no chills. Three weeks ago he had diagnosed a case as one of mild typhoid fever; it had lasted eight or ten days, with constant fever, up in the evening, down in the morning; slight enlargement of the spleen, no spots. His Resident examined the blood and found what he thought were crescents. The case got rapidly better, left the hospital, and returned in a few days with a distinct chill, with crescents in the blood and a well marked remittent fever. The mobile forms he had not seen nearly as frequently as Dr. Councilman; though he had not examined the blood from the spleen they had been present in eight or ten cases. Nor had he seen free filaments nearly so often; when he wrote his paper he had not seen them at all. Since then he had watched the process of separation. It was out of the question to suppose that the crescents or mobile forms could come from degeneration in the stroma of the corpuscle, but that the hyaline forms resulted from such changes was not altogether improbable; and further investigations were necessary to determine this point.

DR. J. P. C. GRIFFITHS called attention to the diagnostic value of these organisms, and instanced a case where from the indefinite history and symptoms he was unable to make a diagnosis until after an examination of the blood, when a short course of treatment resulted in a cure.

DR. H. C. WOOD said that no one seemed to have made any connection between the crescents and the amoeboid forms; they seem to differ in that these are destroyed by quinine, those are not affected. We know that malarial cachexia is cured by quinine, arsenic and iron. If these remedies have no effect on the crescents, what connection have these bodies with malaria? and what becomes of them, do they eventually disappear?

DR. FORMAD asked if these organisms are the same as described by Hütter some twenty years ago?

DR. COUNCILMAN said, in conclusion, that Hutter described moving bodies attacking the red corpuscles, existing in all fevers and apparently almost everywhere else. These observations had never been confirmed. The point raised by Dr. Wood had always puzzled him, and for a long time he had tried to reconcile himself to a belief in two distinct diseases, but this he could not do, as always as the other forms disappear the crescents appear. He had never seen the crescents unless with a history of previous chills. He was not altogether prepared to say that quinine had no effect on the crescents, though in several cases he had given it in large doses with no results. Still in some cases they do seem to disappear. He thought with Dr. Osler that the crescents could not be possibly produced by changes in the stroma of the corpuscles, though some of the other forms might.

contained four times as much carbonic acid as ordinary London air, and that might be taken as an index of the quantity of other impurities which a fog accumulated. Fog was caused by the floating matter in the air attracting to itself the aqueous vapor which was always more or less present. Some forms of matter, such as ammonia and sulphur, had a greater affinity for vapor than other matters. These substances were present in London air to a great and unnecessary extent. The blackness of the fog came from the smoke arising from incompletely burned coal. If smoke was to be avoided houses must be warmed by hot air, hot water, steam or gas, as in the so called smoke preventing open fires care was required in putting on coals and nobody exercised that care.

A report of the Agricultural Department of the Privy Council is a curious example of the unexpected result to which scientific inquiries sometimes lead. The result of an inquiry by Dr. Klein, F.R.S., made for the Local Government Board and published last February, appeared to establish the fact that milk cows could suffer from scarlet fever, as Dr. Klein and Mr. W. H. Power in the inquiry as to the cause of an outbreak of scarlet fever in Marylebone, traced the milk supplied from a certain dairy farm and ascertained that the cows were suffering from a contagious eruptive disease. The same microbe was found in the discharges from this cow disease as was found in the blood of persons suffering from scarlet fever, consequently the conclusion was arrived at that the human being caught the scarlet fever by drinking the milk of cows thus diseased. This theory was adopted by the Local Government Board. The Agricultural Department took the matter up and instructed Professor Crookshank of the Bacteriological Laboratory of King's College, to make an independent inquiry. Professor Crookshank has arrived at the conclusion that this cow disease has nothing to do with scarlet fever, and that the milk which gave the disease must have been contaminated in some other way, probably through the hands of milkers. But this new inquiry has done something more than prove the previous investigation to be wrong, it has most unexpectedly turned up a new fact of great practical importance. It is not necessary to follow the Professor through all the somewhat intricate steps of his argument, suffice it to say that he has apparently proved beyond the range of reasonable doubt that this eruptive disease of the udder of the cow is true Jennerian cow-pox. It is a curious fact that for the last thirty or forty years this disease has not been heard of in England, although at the time when Dr. Edward Jenner published his great discovery, just ninety years ago, it was commonly seen in the dairy farms of the West of England. During the same period there have been but two or three cases observed on the Continents of Europe and America. When it was determined to establish vaccination from the calf at the National Vaccine Establishment, the first supply of lymph to vaccinate the first calf had to be obtained from the Hague and Bordeaux, but since then the civilized world had to depend for its vaccine upon stocks derived from one of these sources, or from the human

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

[FROM OUR OWN CORRESPONDENT.]

Hydrofluoric Acid in Phthisis—Cause and Prevention of London Fogs—Cow pox in England—Prevention of Pollution of Rivers by Soap and Other Works—Multiple Sarcoma with Osteitis Deformans.

Hydrofluoric acid is spoken hopefully of as a new treatment for the cure of phthisis. The patient passes one hour out of the twenty four in a room of the capacity of six cubic metres, into which a current of air is pumped which first passes through a fluid composed of 100 grams of hydrochloric acid and 300 grams of distilled water. The proportion of hydrofluoric acid taken up in the cold under such circumstances would vary greatly with the bulk pressure and velocity of the air current, but would in no case be large, owing to the great attraction of this acid for water. It is, however, stated that this treatment alters the cough immediately, quickly diminishing it, and occasioning its complete cessation in a few days, the bacilla of the sputa concurrently disappearing. Fifteen or twenty days suffice to greatly benefit the patient, if not to cure him entirely. Out of nearly a hundred cases in various stages of the disease treated during some ten weeks this autumn, it is alleged that thirty-five were cured, forty one greatly improved, fourteen seemed unaffected either way, and ten deaths took place. The action of the acid is considered a purely antiseptic one, and several well known physicians are about to make systematic trials of the method.

Sir Douglas Galton recently read a paper at the Parke's Museum Hygiene upon the cause and prevention of those dense fogs which appear yearly to become more frequent and severe in London. The lecturer said that black fog was entirely the result of smoke, one rose to see a lovely sky, but an hour later, when fires were lighted the brightness was dimmed and the sky and light disappeared. Dr. Russell's experiments showed that the air in a fog

being. It is, therefore, extremely interesting to find that cow pox, or vaccinia, has again occurred spontaneously in this country. The dairy farmers and the Agricultural Department are not only triumphant but have returned good for evil. Accused of disseminating scarlet fever, they present the world with a new source of vaccine lymph supply.

At Rochdale an invention to prevent the refuse of soap and other works polluting rivers has been successfully tried. The water containing the dissolved soap is run into a large vault, over this vault are two elevated tanks of the same size and beneath them a retort is fixed. The soapy water is pumped from the vault into the elevated tank and chlorine, generated in the retort from hydrochloric acid and maganese, is forced into the liquid. This causes the refuse and fatty matter to gather in a cake at the bottom. The water in the tanks is run off into the river containing no foreign matter with the exception of a little common salt. The cake of fatty matter and dirt is then treated, the oil extracted by pressure and filtration is made into brown soap exactly like that which is used in the process of washing raw silk. The inventor has been offered £20 per ton by wholesale dealers for the reclaimed soap.

Dr. G. F. Elliott, at the recent meeting of the Medical Society, contributed the notes of a case of multiple sarcoma, associated with osteitis deformans, in a man, æt. 27. There was no history of syphilis, and until February, 1886, the general health had been good. Pain, attributed to rheumatism, then appeared in the knees and shoulders. In December, 1886, the hands and feet were noticed to be enlarged. In June his upper extremities from the fingers half way up the humerus and his legs from the toes to and including the knees were found to be oedematous. There was marked thickening of the bones. The clavicle and some ribs on the right side were also thickened. The skin of the face and hands presented numerous small flattened nodules about $\frac{1}{8}$ in. in diameter, there was more or less hyperæsthesia of the skin of the trunk. There was pleural effusion over the left lung. Later on troublesome diarrhœa supervened. Nine days before death the patient insisted on going home and was thus lost sight of. The diagnosis was premised from cancerous growth on the thoracic duct and Dr. Hilton Fagge's authority was quoted in favor of the nodules being indicative of a sarcomatous growth. G. O. M.

a clear exposition of the modern treatment in strangulated hernia, and strongly urged the advantages of early operative interference. He said that, encouraged by the remarkable success obtained in the treatment of strangulated hernia by the methods suggested by Mitchell Banks, Czerny and others, surgeons had latterly paid special attention to the radical cure operation as applied to cases in which strangulation existed, and the results achieved had been most gratifying. The modern operation found its greatest advantage in the radical cure it secured by the complete closure of the sac and the permanent obliteration of the canal; and it had been successfully performed upon all forms of hernia, inguinal, femoral and umbilical, with equally satisfactory results. In the light of these facts he thought that no operation for strangulated hernia could be said to be properly performed without the final closure of the inguinal canal.

With regard to the management previous to operating Dr. Burchard said that his experience had led him to the adoption of a plan of treatment substantially as follows:

1. Pain is allayed, vomiting quieted, and nervous tranquility secured by the hypodermic administration of morphia and atropia.
2. As soon as practicable a careful examination is made of the hernial tumor; any attempt at reduction being studiously avoided.
3. If evidences of inflammation are found, or if there is much swelling in the tumor, a poultice of flaxseed meal and cracked ice, or the ice-coil, is at once applied; these being dispensed with, however, if the patient is feeble or the strangulation is of long standing.
4. A stimulating enema of turpentine and oil, or a large emollient one of flaxseed tea, is administered, and the rectum thoroughly washed out. If the tumor is at all distended no attempt at taxis is made until,
5. The patient is anesthetized; permission having first been obtained to proceed with the operation in case taxis should fail.

He especially emphasized the advantages to be gained by putting the patient under full anaesthesia (preferably by chloroform), covering the tumor with a rather large and heavy ice poultice, elevating the lower extremities, and keeping the hands entirely off for a period of from thirty to forty minutes. In a number of instances, he said, he had had the satisfaction of seeing the tumor slip back of itself, almost imperceptibly, even after prolonged taxis had been unsuccessfully employed. As to just how long the attempt at reduction was justifiable, no absolute rule could be laid down. In some cases it was advisable that the trial should be kept up for twenty, or even thirty minutes, provided always that only the most gentle manipulations should be employed.

Taxis having proved unsuccessful, the operation should at once be undertaken, and the general principles upon which, as a legitimate surgical procedure, it was based, were the following:

1. A more general recognition by the profession of the value of time in the earlier stages of strangulation; so that surgical relief could now generally be

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A Symposium on Hernia—Treatment of Strangulated Hernia; Management before Operation; Principles of the Operation—Conservative Treatment of Irreducible Hernia—Strangulated Hernia in Children—Telegraphic Mind-Cure.

At the December meeting of the Academy there was a "symposium" on the subject of hernia. It was led off by Dr. T. Herring Burchard, who gave

rendered before pathological changes which were irremediable had taken place in the tissues.

2. Modern herniotomy implies an abandonment of those uncertain and pernicious methods and practices which, founded in a false pathology, sought to relieve the strangulation by producing a condition of systemic relaxation. It is now recognized that spasm, as a causative agent in the production of strangulation, never exists.

3. Modern herniotomy restricts the employment of taxis to within limits which are rational and safe. Necessary as properly directed taxis is in the reduction, by its indiscriminate and reckless use irreparable damage has not infrequently been done to the intestine.

4. Modern herniotomy implies the early resort to a cutting operation. Many lives, Dr. Burchard said, had to be sacrificed before the profession seemed to realize that the gangrene and ulceration, the fecal extravasation and stercoraceous vomiting, the peritonitis and collapse, were not necessary and integral factors of the primary condition of strangulation, but secondary complications, developing later on in the progress of the disease, and the legitimate result of delay in affording relief to the original constriction.

5. Modern herniotomy is an antiseptic operation; demanding the fullest application of Listerian principles.

6. Modern herniotomy requires in the disposition of the hernial sac the finest impartiality of judgment. Certain cases require incision, while in others the strangulation can be readily reduced without opening the sac; so that it would be folly to thus complicate the operation and expose the patient to unnecessary danger.

7. Since Mitchell Banks, of Liverpool, has urged the possibility and expediency of perfecting the old operation of kelotomy, so as to add to the operation done for the relief of strangulation the inestimable advantages of an operation for radical cure, the strongest possible encouragement has been given for the attainment of an early, thorough, and perfect operation.

Dr. V. P. Gibney said that he should like to make some protest against the strong condemnation of taxis which Dr. Burchard had expressed, as he had seen a number of aggravated cases of strangulated hernia reduced under taxis as employed by the average practitioner.

Dr. Robert F. Weir remarked that while the radical operation unquestionably marked an improvement in this field of surgery, it could not as yet be regarded as a perfected operation; and having given some statistics showing the comparative frequency of relapses, he said that surgeons were everywhere practicing the operation, and he feared too freely—that is, too freely in non-strangulated hernia.

Dr. W. B. De Garmo read a paper on the conservative treatment of irreducible hernia, which did not treat of strangulated hernia, but advised a course of gentle manipulations in cases which were generally regarded as irreducible. The first thing to do, he said, was to get the mass freely movable in the sac, and then use compression, rather than ordinary taxis. In the second place, the tumor was to be

separated from the vicinity of the testicle, if it was situated in the rectum. In other words, it was to be perseveringly stripped from its lower adhesions, and gradually worked upwards, no force whatever being used. The complete separation of the omentum so frequently forming a part of the mass was accomplished before the reduction proper was commenced. By taxis he explained that he meant the gentle manipulation of the neck of the sac, but employed in such a way as to avoid pressure back against the abdominal rings, which was apt to be resorted to in taxis as commonly practiced. The manipulations were to be kept up for from fifteen to forty-five minutes at a time and repeated once a day. In some cases he was in the habit of directing self-applied taxis. After the reduction the hernial sac usually remained; but if the hernia was kept properly in place by a well-fitting truss, the sac often disappeared in the course of time. Out of ten cases reported by Dr. De Garmo, there were seven reductions and two failures; while one case was abandoned on account of the patient's having diabetes.

An interesting part of the discussion was that in reference to strangulated hernia in children. Dr. A. G. Gerster read a paper on this subject in which he reported four cases operated upon, and said that there was one point of difference in the treatment required as compared with that in adults; this being due to the difficulty of preventing infection of the external wound in small children. Primary union did not occur after suturing, and he therefore advocated an open treatment of the wound. It was his practice to pack it with iodoform gauze in order to secure an aseptic condition.

Dr. Weir said that he had had two cases in children, like those of Dr. Gerster, in which he operated; and both had proved fatal. In two other cases he had successfully reduced the hernia without operation, by resorting to the expedient of inserting the finger into the rectum, and thus combining internal with external pressure.

Dr. Gibney, who has had an unusually large experience in the matter at the Hospital for Ruptured and Crippled, said that he did not recall a single instance of strangulated hernia occurring in childhood in which it was not possible to reduce the strangulation with the aid of chloroform. Furthermore, he believed that if the hernia could be reduced in children, it could be cured simply by the wearing of a suitable truss. As, in addition, the operation was a more serious one than in adults, he thought, therefore, that operative interference should never be resorted to in children; and such interference became all the more unnecessary in the light of the successful results accomplished by the conservative methods advocated by Dr. De Garmo.

In concluding the discussion Dr. De Garmo said that he had met with only temporary incarceration in children. No serious results had ever occurred in his experience, and he had never found it necessary even to resort to taxis in such cases.

Dark days are in store for the medical profession, and students of medicine might as well at once begin to devote their energies to some other calling, if the

wonderful reports lately published in the newspapers are to be accepted with entire confidence. When anybody becomes ill now it is only necessary for the friends of the patient to telegraph to "Dr." Dresser, "the great mind-healer" of Boston, and prompt recovery will immediately result. At all events, this is what the newspapers tell us occurred the other day, in the case of a little girl 11 years old, in Brooklyn, who was "seriously ill with remittent fever." "Three eminent physicians" assured the parents that there was nothing to be done for the child except to see that she had good nursing. In spite of this advice, however, she continued to grow worse, until she was "actually at the point of death." In this emergency a telegraphic message was sent to "Dr." Dresser, in Boston. For an hour she remained unconscious, during which time, we are informed, the great mind-healer was "working on her;" and "in half an hour she was as well as ever."

P. B. P.

A CORRECTION.

Sir:—I observe in an article on "Conservative Gynecology," Dr. Horatio R. Bigelow says that he cannot agree with the view tendered by one surgeon: "When in doubt, open the abdomen and find out." He thinks a more accurate diagnosis should be made in every case before advising abdominal section. This is not the first occasion by many times on which I have had to correct this deliberate misquotation by Dr. Horatio R. Bigelow. He does not indicate me this time by name as he has in other instances, but the quotation which he says he takes he specifies in other instances to be from me.

I have never said, and I do not believe any other living surgeon has ever said, "when in doubt, open the abdomen and find out." What I have said is: "The abdomen should be opened in cases of doubt only when there is risk to the life of the patient, or when the patient is in a serious condition;" a very different thing indeed from Dr. Bigelow's words. I am, etc.,

LAWSON TAIT.

7, The Crescent, Birmingham, December 15, 1887.

NECROLOGY.

CHARLES G. POMEROY, M.D.

Dr. Charles G. Pomeroy died in Newark, Wayne Co., New York, on December 14, 1887, in the 71st year of his age. Dr. Pomeroy was one of the best-known physicians and surgeons in Central New York. He was a member of the American Medical Association, permanent member of the New York State Medical Society, a member and one of the founders of the New York State Medical Association, ex-president of the Medical Association of Central New York, and often was elected President of the Wayne County Medical Society. During the war he received a surgeon's commission, but was never in the field. At his death he was one of the

trustees of the New York State Custodial Asylum for Feeble-Minded Women, and until his health failed was the institution's treasurer and physician. He was public spirited, and of the strictest integrity both in and out of his profession. D. C.

MISCELLANEOUS.

THE ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL in the State of New York, will hold its third annual meeting at the New York Academy of Medicine, January, 18, 1888, commencing at 10 A.M.

OMISSIONS.—By mistake the following names were omitted from the List of Permanent Members of the American Medical Association, published in THE JOURNAL for December 31, 1887: T. Wertz, M.D., Jasper, Indiana; Talbot Jones, M.D., St. Paul, Minnesota.

QUADRENNIAL DISCOVERY PRIZE OF £1000.—1887-1890.—In accordance with the terms of the Grocers' Company's Scheme, the Court announce that the problem proposed as the matter of competition for the first Discovery Prize, (1883-1886) viz.:

"To discover a method by which the Vaccine Contagium may be cultivated apart from the animal body, in some medium or media not otherwise zymotic;—the method to be such that the Contagium may by means of it be multiplied to an indefinite extent in successive generations, and that the product after any number of such generations shall (so far as can within the time be tested) prove itself of identical potency with standard vaccine lymph," has not been solved by any of the candidates. The Prize has, therefore, been withheld, and the same problem is, subject to the conditions of the Scheme, again proposed for investigation. The Prize is open to universal competition, British and foreign. Competitors for the Prize must submit their respective treatises on or before December 31, 1890, and the award will be made as soon afterwards as the circumstances of the competition shall permit, not later than the month of May, 1891. In relation to the Discovery Prize, as in relation to other parts of the Company's Scheme in aid of sanitary science, the court acts with the advice of scientific assessors. All communications on the subject are to be addressed to the Clerk of the Grocers' Company, Grocers' Hall, London, E.C.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM DECEMBER 31, 1887, TO JANUARY 6, 1888.

Major P. J. Cleary, Surgeon, granted leave of absence for one month. S. O. 138, Dept. Ariz., December 25, 1887.
Capt. R. G. Ebert, Asst. Surgeon, ordered from Ft. Custer, Mont., to Ft. Pembina, D. D. S. O. 301, A. G. O., December 30, 1887.
First Lieut. C. B. Ewing, Asst. Surgeon, granted one month's leave. S. O. 137, Dept. Missouri, December 27, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JANUARY 7, 1888.

Surgeon S. D. Murray, on being relieved at Ship Island, Miss., to proceed to Key West, Fla., and assume charge of the Service. January 4, 1888.

P. A. Surgeon S. C. Devan, relieved from duty at Port Townsend, W. T.; to assume charge of Sapelo Quarantine. January 5, 1888.

P. A. Surgeon A. H. Glennan, relieved from duty at Key West, Fla.; to assume charge of the Service at Port Townsend, W. T. January 5, 1888.

Asst. Surgeon P. M. Carrington, promoted and appointed P. A. Surgeon from January 20, 1888. January 7, 1888.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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CHICAGO, JANUARY 21, 1888.

No. 3.

ORIGINAL ARTICLES.

THE GERMICIDAL, ANTIZYMOTIC, ANTISEPTIC, ANTI- PYRETIC, DISINFECTANT, AND OTHER MED- ICAL PROPERTIES AND APPLICATIONS OF NITROHYDROCHLORIC ACID.

BY GEO. J. ZEIGLER, M.D.,

LATE PHYSICIAN TO THE PHILADELPHIA HOSPITAL.

In the eager search for new remedies, and especially in the present earnest quest for more efficient germicides and antipyretics, we are apt to overlook the known merits or undiscovered properties of the old ones; whereas, while we welcome the new, we should cherish the old and good, and seek the additional advantages which a closer scrutiny of them affords. Of none is this more true than the agent under consideration—nitrohydrochloric acid, which, as its name indicates, is a compound of nitric and hydrochloric acids in different proportions, by their combination forming the well-known nitrohydrochloric acid, or aqua regia. This agent is endowed with a series of remarkably valuable medicinal and other qualities rendering it applicable for a wide range of sanative and remedial purposes, as well as useful in the arts. Thus, as it yields free chlorine in a nascent and most active state, appreciable by the taste and smell, in an acceptable, easily tolerated and agreeable form, it constitutes at least one of the most powerful, safe, and useful germicides, antizymotics, antiseptics, and disinfectants known. Moreover, it probably supplies nascent oxygen from the reaction of its constituents, another potent antizymotic, antiseptic, disinfectant, oxidizer, chemico-organic alterative, purifier, solvent, nutrient and vitalizer; while altogether it is antalkaline, germicidal, refrigerant, febrifuge or antipyretic, antiseptic, antizymotic, antitoxic, antiperiodic, antiscorbutic, antihæmorrhagic, antiphlogistic, antipyric, antilithic, alterative, disinfectant, sialogogue, cholagogue, laxative, diuretic, secernent, depurant, solvent, digestive, stimulant, vivifying, restorative and tonic, its acidulous, oxidizing, purifying, refreshing, digestive, invigorating, vitalizing, and other salutary properties rendering it very acceptable to the stomach and animal economy, thus forming a rich and peculiar combination of sanative and medicinal qualities, independent of its extraneous adaptation in the arts.

With few exceptions, mainly from local lesions in the gastro-intestinal canal and kidneys, nitrohy-

drochloric acid is generally applicable in all pathological states of superalkalinity of blood and system, local and constitutional, benign and malignant, such as scorbutic, purpuric, hæmorrhagic, inflammatory, suppurative, gangrenous, ulcerative, purulent, sanious, dropsical, and analogous disorders, especially of a toxæmic, lithæmic, uræmic, bilious, albuminuric, serous and mucous character, and of a more malignant type, as pernicious fevers and conditions generally. It is particularly efficacious in all superalkaline, scorbutic, zymotic, septic, contagious, malarial, toxæmic, cholæmic, and uræmic diseases, adynamic fevers, and infectious affections, with those maladies dependent upon a necræmic, mephitic and putrescent condition, even with local lesions both internally and externally, though rather too active and laxative in general for those in the gastro-intestinal canal connected with typhoid or enteric fever, cholera, and like abnormalities, for which the milder and more astringent hydrochloric, sulphuric, phosphoric, hydrobromic, and other less exciting acids are usually preferable, separately or with their compounds of iron and lime more especially, which increase their constringing, styptic, tonic, and healing properties.

Asepsis should be general as well as special, from the interior as well as exterior of the animate body, and include the entire organism, or universal in its range and application, as the primal cause of the development of microscopic plants or pathogenic germs, concomitant toxic matter and disease both benign and malignant, is general. The basic material or pabulum vita for the germination, sustenance and growth of these parasitic vegetal organisms, microzymes or germs, and the production of poisonous or infectious matter in the vital economy is the same as for plants of all kinds, with their products, outside of the living body, in the earth, air and elsewhere, viz.: the volatile organic alkali ammonia, for every variety and form of plant, microscopic or macroscopic, within or outside of the vital organism, derives its nourishment and support therefrom. Wherever, therefore, there is a sufficiency of this ammoniacal pabulum for the sustenance of vegetal organisms, they will germinate, grow and develop after their kind, bear fruit, food, poisons and other matters, good, bad or indifferent, inside as well as out of the living animal body; this being, in fact, a constant spontaneous generator of ammonia and its compounds, carbonate, urea, etc., with its adjuncts carbonic acid and water, the essentials of vegetal development and growth everywhere, of every form, kind

and size of herbage, of which the first is the principal and most important, and hence the basis of the science and art of agriculture in all its departments, microscopic as well as macroscopic. There is thus a constant generation of this ammoniacal principle and plant food in the animal economy, which from various causes often passes the normal and becomes superabundant and directly a source of excessive fluidity of blood and disease of various kinds, as well as pabulum for the support, growth and evolution of these parasitic microphytes, toxic ptomaines, poisonous alkaloids and other foreign and morbid matters in the living body. Therefore, if you neutralize, decompose, eliminate or destroy this superabundant ammoniacal material and vegetal food upon which all microscopic as well as macroscopic plants thrive, you prevent the development of or starve these bacteria, microphytic poisons, and other extraneous entities in the vital organism, the same as sterilizing the soil will prevent the evolution of or starve all kinds of plants and products in the earth. This can be more or less readily effected by an antalkaline and acidulous regimen and medication, one of, if not the most powerful counteracting and destructive agents for the purpose being nitrohydrochloric acid. As an antalkaline, germicide, antizymotic, antiseptic, antipyretic and disinfectant this is exceedingly active, whether the superalkalinity, germs, or toxic matters are of a primary or secondary origin, pathogenic factors or results of morbid conditions, here is an agent that meets all the requirements, safe, salutary, agreeable and acceptable to the human stomach and system, or entire animal organism, and of general application, that will prevent and destroy them largely, and correct the consequent disorder they occasion, or underlying superalkaline, ammoniacal, and other abnormalities upon which they are dependent, as well as remove the fevers or other morbid states resulting from and connected therewith. Though the practical fact that this acid medicament, with the acid regimen and medication generally, resolves and cures these so-called germ diseases, is worth more than volumes of hypothetical speculation respecting their origin, yet it is necessary for scientific precision and therapeutic perfection to determine the causative factors of disease positively, speculation being as essential to the advancement of medical as all other branches of science.

In ship, typhus, bilious, remittent or malarial, scarlet, puerperal, and other fevers of a malignant and adynamic type, with variola, rubeola, quinsy or putrid sore throat, diphtheria, erysipelas, carbuncle, and other zymotic, septic, pyæmic, contagious, and putrescent diseases, as well as in the minor scorbutic, necræmic, diphtheroidal, carbuncloid, gangrenous, and inflammatory affections, I have given nitrohydrochloric acid freely, and with so much success that I now habitually prescribe and rely upon it therein as the basic and specific remedy for the underlying constitutional dyscrasia and superalkalinity of blood, as well as general resolvent of their sequelæ, though using at the same time as adjuvants all other remedies indicated for special purposes. It neutralizes the ammoniaemia and superalkalinity of system, disinfects

and destroys zymotic, septic, contagious or infectious, poisonous and mephitic matter in the mouth, throat, nares, gastro-intestinal canal, liver, lungs, blood, and body, promotes the normal secretions of the salivary glands, stomach, liver, bowels, kidneys, and other organs, depurates and purifies the fluids and solids of the entire system, quenches thirst, reduces fever, resolves abnormal conditions, and restores the healthy equilibrium of hematosis, circulation, nutrition, secretion, excretion, or defecation, and life action generally, while at the same time it exerts a stimulant influence upon the brain and nervous system, or gives a "buoyant feeling," as a patient expressed it, invigorating and enlivening the whole being, body and mind.

Nitrohydrochloric acid is thus specifically potent not only in the milder disorder of a non-infectious, scorbutic, and mephitic character, but also in the most malignant and contagious maladies, as typhus, ship, scarlet, puerperal, and like fevers, with smallpox, diphtheria, cyncanche maligna or putrid angina, erysipelas, carbuncle, and other zymotic, septic, putrescent, and pernicious diseases. It is, hence, especially indicated in yellow, as in ship and cognate fevers, with other septic, infectious and malignant maladies, and may be given freely therein separately or in conjunction with other mineral, vegetal and animal acids or remedies indicated, and doubtless with as beneficial effects in the former as in the latter. Besides other evidence which might be adduced of its superior value, this was clearly exemplified in seventeen or more cases of ship fever which came into the Philadelphia Hospital under my care at one time. The patients were seriously ill, spotted with the macula of typhus, and so offensive and contagious that it was dangerous to go near them; yet with the free administration of vegetal and mineral acids, nitrohydrochloric acid being the principal, they were soon disinfected, purified, revived, and restored to health, all recovering except one brought in moribund and dying before treatment could be instituted. In septic and toxæmic states, with or without local complications, as in malarial, bilious, remittent and other adynamic fevers, with lithæmia, scurvy and scorbutic conditions generally, benign or malignant, this acid is also a sovereign remedy. It is a specific for all forms of asthenic inflammatory, putrid, and diphtheroidal sore mouth, throat and adjacent parts, as it dissipates the disease rapidly. It is also the basic and specific remedy for diphtheria itself, with acetic, lactic, citric and other acids, pepsin, papoid and other solvents of the fibro-plastic membrane, and the active stimulants and tonics indicated. Hydrogen peroxide is also applicable as a germicide, antiseptic, antizymotic, disinfectant, solvent, oxidizer, vitalizer and tonic in this dire affection, with all other scorbutic, septic, putrescent, infectious and contagious diseases. As an oxidizer, vitalizer, alterative, resolvent, depurant, stimulant and tonic, nitrogen monoxide is also specially indicated in diphtheria with asphyxiating and adynamic conditions generally. Nitrohydrochloric acid likewise acts specifically as a potent germicide, antiseptic, antizymotic, antipyretic or febrifuge, antipylic,

disinfectant, depurant, laxative, diuretic, secernant, resolvent and tonic, in all forms and stages of scarlatina, in destroying the germs and infecting principle or contagium, aborting and subduing the fever, preventing and correcting the inflammation, soreness and ulceration of the throat and glands, disease of the kidneys and resulting dropsy, with desquamation of the skin, and in overcoming the toxicity of blood and system, promoting healthy renal, hepatic, and other secretions, and in restoring the normal action of the bowels and state of health generally. In the malignant type of rubeola it is likewise beneficial, but in the more active catarrhal form, with hard, dry cough, the neutral or alkaline salts are most appropriate, either alone or in conjunction as indicated, the variety modifying the treatment in this as in other diseases. Besides these pernicious anginose affections with septicity of blood and local complications, there are other allied maladies, as puerperal peritonitis and fever, erysipelas, and similar morbid states, in which it is very efficacious. The use of nitrohydrochloric acid occasionally according to necessity during pregnancy, is especially indicated as an efficient antalkaline germicide, antiseptic, alterative, or chemico-vital transformer, disinfectant, refrigerant, depurant, secernent, laxative, diuretic and tonic, that will prevent, counteract or resolve the concomitant albuminuria, uræmia, anasarca, and other serious ailments incidental thereto, and avert puerperal eclampsia and fever, with many of the minor ills of gestation, as it will preserve and restore the equilibrium of health, make the patient comfortable, and abort or break up the disposition to puerperal disorder of most kinds.

Long since, in the *Boston Medical and Surgical Journal*, Vol. xlv, Nos. 22 and 23, under the comprehensive title of "Anæmatosis," I treated of various analogous pathological states as similar diathetic conditions, viz.:

- Tuberculosis,
- Albuminosis,
- Adiposis,
- Glucosis,
- Toxicosis,

believing them all to be dependent upon the same general cause of a deficiency of oxygen, or more precisely, defective oxygenation of the blood and system. Thus, while both albuminuria and glycosuria may be occasional, accidental and limited, and within the physiological and normal line of health from deficient oxygenation, the kidneys acting as a sort of safety-valve to free the vital economy from or allow the excess of unassimilated albumen and sugar to escape with other extraneous matters ordinarily, but which gradually or suddenly increasing beyond the normal limits and passing into the pathological state with the morbid manifestations peculiar thereto in various degrees of intensity, until they finally culminate in pronounced disease of the severest type, with excessive loss of nutrient matter and consequent irritation, congestion inflammation and disorganization of the renal organs, similar to tuberculosis in the lungs. Some time after, about twenty or more years ago, I reviewed the subject in the *Medical and*

Surgical Reporter. This brought me a well-known physician, Dr. H., of a bilio-lymphatic temperament, large and portly, rather past the meridian of life, who said that he had been afflicted with albuminuria for sixteen months, and was greatly despondent thereat, believing that he was incurable, especially as he had been declared by his medical friends, among whom was the late Prof. Gross, to be a hopeless case of Bright's disease, in which he coincided. In accordance with my idea of the general cause of this affection, viz., defective oxygenation, I recommended an abundance of pure air, and to insure this, to live an active out-door life as much as possible, with corresponding hygienic measures, and moreover, advised him to take nitrohydrochloric acid as an antiphlogistic, antitoxic, alterative, resolvent, disinfectant, chemico organic transformer, oxidizer, vitalizer, diuretic, and tonic, as hydrogen peroxide, nitrogen monoxide, and other sources of oxygen were not so convenient then as now; the albuminuria disappeared, and he recovered. Gross met him some time after and expressed surprise at seeing him yet alive, saying, according to the rules of medicine he ought to have been dead six months before. However, he lived for about *eighteen years* thereafter, even longer than his eminent confrère who had doomed him to an early death so many years before. This case affords an instructive lesson, as it strongly shows the shortsightedness of regarding seemingly remediless diseases as incurable, and doing nothing, or continuing in the old ruts to destruction, instead of working out some new course which may lead to conservation and recovery, especially when it is proven that many chronic, difficult, and so called hopeless cases can often be cured, or at least relieved, and life prolonged and made comfortable by judicious treatment, as the experience of scientific physicians so frequently testify, and the haphazard experiments of empirics occasionally illustrate to the discredit of legitimate medicine. Such cases are often incurable only because we do not know how to treat them properly from the want of correct knowledge on the subject, and not absolutely or inherently irremediable. This is strikingly exemplified in the case in point, for here is an afflicted man, a physician himself, with his own life at stake, and presumably *au fait* with all the best treatment for relief as well as his medical confrères, doomed to death by all as a hopeless case of supposed incurable disease, and yet recovers with very simple treatment. Hence, in all such apparently irremediable cases, it would be better, guided by reason, to strive for relief and cure even under the most adverse circumstances, as I have seen cases the most uncompromising and seemingly hopeless, both acute and chronic, react and recover under appropriate treatment.

But to return to the special subject of study. In lithæmic, uræmic, toxæmic, chylæmic, or icteroid and bilious affections, defective and atrabile, gallstones, oxaluria, with other forms of lithiasis, and ammoniacal or alkaline urine, aneuria, constipation, hæmorrhoids, hypochondria, pertussis, with analogous blood and nervous disease, both infectious

and benign, dyspepsia, struma, syphilis, chronic rheumatism, and cutaneous affections of various kinds, degrees and parts, dependent upon or connected with superalkalinity and similar toxic states of the blood and system, defective or depraved secretion, etc., nitrohydrochloric acid is likewise very efficacious. In the albuminuric, uramic, hepatic, cardiac, renal, puerperal, and other varieties of anasarca, or almost all forms and degrees of dropsy, it is very active in counteracting the underlying chemico-vital derangement, restoring the balance of nutrition, with hepatic, renal and general secretion, producing diuresis, defecation, and in correcting the proximate cause of systemic disorder; removing its effects and reestablishing the healthy state of the entire economy. It is inapplicable, however, where a calorifying alterative and diuretic is required, nitrous oxide being far superior as an oxidizer, vitalizer, chemico-organic revolutionizer, resolvent, stimulant, tonic and diuretic, curative not only of dropsy, but of a great variety of diseases and other abnormalities.

In scrofulous and inflammatory states, eczema, herpes zoster, and other cutaneous eruptions, carbuncles, ulcerations, phlegmonous, gangrenous, purulent and suppurative affections generally, nitrohydrochloric acid is highly efficient as a resolvent and curative. In acute inflammation its activity and value was strikingly exhibited in the case of a young lady of a nervo-lymphatic temperament, subject to that intractable ailment, periodontitis and alveolar abscess, whenever her blood becomes superalkaline. Upon one occasion in the afternoon, her teeth became loose and the lips and face rapidly swelled out of all proportions, accompanied with exquisite pain and suffering, threatening a general suppurative inflammation of the gums, integuments of the teeth and face, but by a liberal dose of nitrohydrochloric acid, ten drops of the dilute every hour to saturation, the superalkalinity of system was soon corrected, the disease conquered by the next morning and quickly subsided. Nothing else was given or done, the acid being sufficient, and always relieving her. Whenever the laxative effect of the acid is not prompt enough, a moderate purgative dose of citrate of magnesia may be added. Moreover, by correcting the general dyscrasia upon which they are dependent, and acting as antalkaline, germicide, antiseptic, resolvent, alterative, tonic, etc., with soothing or appropriate local treatment, it also counteracts and discusses that malignant disorder, carbuncle, with its phlegmonous and gangrenous analogues. Further, in that still more formidable general disease, variola, with its serious local lesions, and the extreme derangement of toxæmia, pyæmia, fever, inflammation, suppuration, contagion and infection, nitrohydrochloric acid seems to destroy the small-pox contagium, abort and overcome the fever, subdue the inflammation, prevent, shrivel and dry up the pustules, conquer the disease *aborigo*, and counteract and resolve the malady altogether, hence is especially adapted to the prophylactic and curative treatment of this dire pestilence, with all similar pathological conditions. Other acids are also useful for the same purpose in varying degree.

While either one of its constituents—nitric or hydrochloric acid, of this compound nitrohydrochloric acid, may have similar effects to a certain extent, they cannot separately fully exert the same influence as when combined, either in character, efficiency or power. Other compatible acids mineral, vegetable, and animal, with acidulous fluids and fruits, as sour buttermilk, lemons, grapes, and edible tart things generally, may be used in conjunction therewith according to special indications, but of the general subject of acid medication and regimen I have treated somewhat fully in my work on the "Basic Pathology and Specific Treatment of Diphtheria, Typhoid, Septic, and Allied Diseases." In various complications of inflammatory, fibrous and plastic exudates, the neutral or alkaline salts are useful adjuvants as solvents and discutients, as sodium and potassium chlorate, etc., while the acid is the main and basic remedy, with the more active stimulants and tonics.

The constitutional effects of nitrohydrochloric acid are produced by its external application in baths, ablutions, etc., as it is absorbed, and is thus applied for the relief of various hepatic and other affections too well known to require further mention here. In cases of poisoned wounds and bites of irritated and rabid animals, I have been in the habit for many years of giving with the best results, nitrohydrochloric acid internally to counteract and destroy any toxic matter absorbed, as well as to apply it externally and chlorine water or chlorinated soda with or without carbolic acid, to most effectually nullify and eradicate any venom which might be deposited or taken in, continuing them as freely and long as the patient desired to satisfy and quiet the mind with the assurance that the most effective measures internally and externally, had been employed for the destruction of infective virus and the preservation of health and life. Hydrarg. bichlorid. might be added both internally and externally, if thought necessary, with other germicidal, antitoxic, alteratives, and disinfectants.

Nitrohydrochloric acid thus affords a simple, safe, convenient, agreeable, expeditious, efficient and reliable means of disinfecting the living body of persons thoroughly, under the most adverse as well as favorable circumstances, as on ships at sea, at quarantine, in hospitals, and in private life, at any time with the least trouble and expense. Although caustic and escharotic when concentrated it is innocuous when diluted, except when continued too long or freely it may produce pyæmia and sore gums, hence should be occasionally intermitted in chronic diseases whenever anything of the kind threatens or occurs. Otherwise it is agreeable to the stomach and system generally, and pleasant to take properly diluted, in from two to four drops of the strong or ten to twenty drops of the dilute acid every hour, two, or three hours, more or less frequently according to necessity. In water, lemonade, infusion of barley, or other mild acidulous and bland liquid alone or sweetened to taste, it is an acceptable, antalkaline, germicidal, antiseptic, antitoxic, disinfectant, refreshing, nutrient, restorative, and tonic beverage, very grateful and invigorating to those suffering with scorbutic, malarious, hepatic, contagious, septic, febrile, infectious,

mephitic, and other affections. As a nutritive diluent to promote its efficiency and increase the ingestion of acid, I usually give it with the juice of one lemon, in a goblet of sweetened water or other suitable menstruum, as freely as required and the stomach will bear, or if the quantity of fluid is objectionable, lessen the water and lime juice proportionately. To protect the teeth, it should be taken through a glass, clay, straw, or other non-corrosive tube, and the mouth rinsed with lime, or other alkaline and plain water, though in edentulous children and adults it may be directly taken without such precautions, its localized action on the mouth being often desirable, always avoiding of course, its contact with metallic spoons, or other neutralizing and contaminating substances.

In urgent and extreme cases, nitrohydrochloric acid should be pushed vigorously or given freely *ad saturandum*, to neutralize the superalkalinity of the blood and system, toxæmia, septicæmia, pyæmia, uræmia, and other pathological states, destroy the contagious and infectious principles, or germs, and resolve the concomitant abnormalities as soon as possible, except in the extreme of Bright's disease, scarlatina, etc., wherein the kidneys are greatly disabled, when more discretion is necessary, so as not to throw too much work on them suddenly or overpower them with the materials of uriniferous elimination, though it tends to resolve the renal disorder, restore the normal constitution, secretion and excretion of the urine, and excite diuresis, but in typhus, ship, yellow, bilious, malarial, and other fevers, variola, with the exanthemata, and other general and local diseases of a malignant, infectious or contagious, and scorbutic character, it may be given somewhat freely, unless the stomach is intolerant, when smaller quantities at shorter or longer intervals, by frequent sipping or sucking through a tube as it can be borne, according to indications or necessity is more appropriate.

In consequence of the cheapness and general efficiency of nitrohydrochloric acid it is peculiarly appropriate as a sanative and remedial agent for persons in ships, quarantine, hospitals, and for people of limited means, as well as the richer class. It is easily prepared by mixing gradually the two component acids—nitric and hydrochloric, in the proportion of three parts of the former to five of the latter, or of one to two, or equal parts of these acids, and after effervescence ceases to put and keep in a dark bottle in a cool, dark place, as it is apt to deteriorate from warmth, light, and time, hence it should be made in limited quantities, according to requirements. When fresh it is of a golden yellow or orange color, and should not be kept long in solution sweetened with sugar or syrup as it is apt to form oxalic acid therewith, a deadly poison, and of course, a dangerous mixture. Therefore, to insure purity, avoid accidents, and otherwise, it would be to the interests of physicians to dispense it themselves in small quantities at a time as needed.

I have thus presented a very general outline of the medical properties and applications of nitrohydrochloric acid believing it from my experience, to be of inestimable value as a sanative and medicinal agent,

applicable to the prevention and cure of a wide range of abnormal conditions, both benign and malignant, local and constitutional, and affording a safe, convenient, certain and speedy means of resolving many serious diseases that now receive very complex, expensive, unsuccessful, and unsatisfactory treatment. Therefore, I hope that this superexcellent medicament will be given a thorough trial and be put to the severest practical test by everyone having the opportunity to use it, so that the facts relating thereto may be more positively determined, for it is only by a multiplicity of observations and the experience of many recorded that the truth can be most fully established.

116 N. Fifteenth St., November, 1887.

THE MORBID ANATOMY OF PERI-CÆCAL INFLAMMATION.

*Read before the Philadelphia County Medical Society.
December, 14, 1887.*

BY J. H. MUSSER, M.D.,
OF PHILADELPHIA.

Much confusion appears to exist in regard to the nomenclature of the inflammatory affections of the region we are about to consider. It may, therefore, be well to state the meaning of the various terms which will be used in this discussion. By typhlitis we shall understand inflammation of the cæcum; by peri-typhlitis, inflammation of the peritoneum covering the cæcum; by para-typhlitis, inflammation of the connective tissue behind the cæcum. The term typhlitis is often used to include inflammation both of the cæcum and of the appendix. We shall, as suggested by Dr. Fitz, use the term appendicitis for inflammation of the appendix, appendicular peritonitis for typhlitis of the appendix and its serous covering, and para-typhlitis for inflammation of the connective tissue around the appendix, or, if you please, peri-cæcal.

It is well to know the relative importance of the inflammatory affections in this portion of the intestinal tract. Typhlitis has been considered by systematic writers to be a frequent affection, and yet it is difficult for pathologists to find records of autopsies in which this condition has been found. It is true that some writers, especially the Germans, have described cases, particularly of stercoral typhlitis, in which inflammation and ulceration of the mucous membrane of the cæcum, by pressure from fecal impaction, was present. Most of us will, however, agree with Fagge that typhlitis is a good general expression used for all varieties of inflammation occurring in the right iliac fossa, but that in the majority of cases the correct term should be appendicitis. Fagge relates a case of Williams' in which the patient had all the symptoms of peri-typhlitis with a tumor in the right iliac fossa. He was recovering from this when an acute affection of the pleura caused his death, and at the post-mortem there was found appendicitis, with ulceration and perforation, and not typhlitis. Dr. Wilkes agrees with Fagge in this view, and they consider that the difference in degree of the inflamma-

tion alone accounts for the difference in the symptoms, and that the largest number of cases are due primarily to inflammation of the appendix.

That inflammation may occur in the cæcum as it may occur in any other portion of the large intestine no one will deny. But we can say from the records of Dr. Fitz that perforation of the cæcum is most rare, for in a most extensive research he was able to find but three cases, and in these instances, due to foreign bodies. We shall, therefore, with Fagge, consider that appendicitis is the real affection that occurs in the region we are discussing (see Appendix, I).

A word with reference to the anatomy. The cæcum normally varies much in position as well as in shape. On the blackboard are drawings of different forms of the cæcum, as detailed by Treves in his lectures on the anatomy of the intestinal canal. He thinks that the cæcum is most frequently found, not in the right iliac fossa, but on the psoas muscle itself, or in the pelvis; that the cæcum is entirely surrounded by peritoneum rather than only partially, and, therefore, that behind there is no areolar tissue as was described by the older anatomists. He does not believe, moreover, that there is a meso-cæcum.

It is also of importance to note variations in the appendix in the consideration of peri-cæcal inflammation. The usual position, as found by Mr. Treves and by Dr. Fitz, is behind the ileum and its mesentery, with the tip pointing toward the spleen. The second most usual position is behind the cæcum with the tip pointing upward. Long appendices usually take this upward direction. Fitz also refers to its lying on the psoas muscle with or without the tip in the pelvic cavity. There are other variations in position. It may stretch across the pelvis and become adherent to the sigmoid flexure of the colon, and in one instance I have seen the appendix in the inguinal canal associated with hernia. In another instance it was adherent to a pyosalpinx (see Appendix, II). The appendix varies in size, it varies as regards the character of its walls, and it varies as regards its contents. It may vary in length from one and one-fourth to nine inches. There is a famous specimen in which the appendix was nine inches in length. It lay behind the colon, reaching to the under surface of the liver (see Appendix, III). In cases dying from causes not associated with this region, the appendix is often found as a cord-like body, having been the seat of previous inflammation. It may have a dilatation either at its blind extremity or in some portion of its length, especially pouch-like at the mouth. Sometimes the entire canal is dilated and filled with catarrhal products.

The character of the contents is of importance. Various articles have been found in the appendix, but chiefly fecal masses. Seeds of various kinds, buttons, bristles, worms, shot, pins and gall stones have also been found. It is in all probability on account of the presence of these foreign bodies that we have the serious secondary symptoms that arise (see Appendix, IV).

I shall next speak of the morbid anatomy of peri-cæcal inflammation. First, with regard to the man-

ner of making autopsy in such a case. There is usually an extreme degree of peritonitis, and unless the post-mortem is made with great care, it will be impossible to find the seat of perforation, if one exist, and the exact conditions and relations of the peri-cæcal inflammation. The easiest method is to begin at the first loop of intestine that is reached and from that unravel the intestines, separating with great care the adherent parts. If a source of obstruction is found, tie the bowel on both sides and examine the portion *in situ*, turning the gut if necessary. Such an examination is absolutely necessary in order to make a thorough study of the part.

Inflammation of the appendix occurs both of the simple catarrhal and of the ulcerative type. That we have catarrhal inflammation we know from the lessons of morbid anatomy. Clinically, it would be impossible to determine the presence of such an inflammation, however. Catarrhal inflammation with succeeding ulceration, local peritonitis, and, finally, perforation, also occurs; and the following conditions are generally found after death: In the first place, on section of the abdominal walls there is found, especially in the right iliac region, an oedematous state of the tissues; not only may there be serous oedema, but there may also be infiltration of pus, due to the burrowing from the primary abscess. The peritoneum, if involved, will exhibit an intense degree of inflammation with the characteristic injection, sometimes general, sometimes limited; and more particularly to the right iliac fossa and the pelvis (see Appendix, V.). Serum will be found in the peritoneal cavity, and in some instances pus; blood is occasionally found. In the more severe forms, especially, large flakes of lymph cover the intestines, the parietal peritoneum, and the abdominal organs. The intestines are also more or less adherent to each other, depending upon the duration and degree of the inflammation. The location of the abscess, for it is usually circumscribed, depends upon the position of the cæcum. There are three positions in which it is most frequently found—either in the right iliac fossa just above Poupart's ligament, or behind the cæcum, or in the pelvis. In a case which recently came under my observation, the abscess was found in the pelvis, one and one-half inches below the level of the psoas muscle, four inches from the anterior superior spine of the ilium on the right side, and two inches from Poupart's ligament. In another case the abscess was found behind the cæcum in the connective tissue of the right iliac fossa. The size of the abscess varies, sometimes containing only two or three ounces of pus, and in other instances as much as a pint or more has been removed. The walls of the abscess differ according to its position. In the first instance mentioned the upper wall was made up of the cæcum, the right of the pelvic wall, while posteriorly and on the left it was circumscribed by the adherent intestine. The walls of the abscess may be made up by the intestines alone. The appendix is always found in the abscess, and has undergone changes varying in degree with the duration and severity of the inflammation. Inflammation and ulceration of the mucous membrane, serous or purulent

infiltration of the walls, with perforative ulceration and encysted or localized peritonitis, are discovered. In some instances a portion has sloughed entirely off and cannot be found, having undergone dissolution; in others it is found as a soft mass of necrosed tissue (see Appendix, VI). The perforation varies in size; sometimes it completely surrounds the appendix, or even severs it in two, or it is sufficiently large to admit a probe only, while even in other instances it can scarcely be detected. Sometimes two or more perforations are found, and frequently they are covered by recent lymph. The canal of the appendix is very often dilated. We usually find in the canal, near the cæcum, a foreign body; it may, however, be found in the abscess. In the cases detailed by Dr. Fitz, foreign bodies were found in 60 per cent. In other cases their presence or absence could not be positively determined, from haste at the autopsy, from their disintegration, or from their discharge into the bowel, so that the proportion is probably larger than stated. There is one point of importance in reference to the surgery of this region, and that is, that the perforation usually occurs within one and one-half or two inches of the colon. Whatever may be the length of the appendix, the perforation is as a rule found at the point just indicated.

There are, of course, many cases that do not terminate fatally. Under such circumstances resolution takes place, or the abscess becomes encysted, or the abscess ruptures into some neighboring organ. Dr. Bernardy related a case to me where rupture occurred in the upper portion of the rectum and also through the abdominal wall of the umbilicus. Dr. Edwards had a case in which fully one and one-half inches of the appendix had sloughed off; the abscess ruptured into the bowel, carrying with it the portion of the appendix and a mass of grape seeds, which were discharged together. The abscess may discharge through the abdominal wall, through the scrotum, into the hip-joint, through the loin or the perineum, or in other directions. Sometimes the pus burrows upward, even as high as and into the pleural cavity. I may say that the bladder is a favorite seat for the rupture of such abscesses.

That cure may take place in cases of perforation of the vermiform appendix, this specimen distinctly shows. It was prepared by Dr. William Pepper, and is in the museum of the Pennsylvania Hospital. The patient died of another affection. The appendix was cord-like, except in one place, where an old perforation was seen, with organized blood-clot and lymph on the surface.

These are the chief points in regard to the morbid anatomy of peri-cæcal inflammation. In the first place, that peri-cæcal inflammation is due to the inflammation, ulceration, and rupture of the appendix vermiformis with the secondary formation of an abscess; that the position of the abscess depends entirely upon the position of the appendix; that the further course of the abscess cannot be determined; that in the larger number of cases the inflammation and ulceration are due to the presence of a foreign body occluding the canal—a retention inflammation. The sequence of events

appears to be as stated; and while it may appear to be a refinement of terms to differentiate between typhlitis and appendicitis, it is almost necessary in order that a correct and well-defined appreciation of the pathology be determined, so that early and proper treatment may be instituted. Unless such a refinement be made, cases of this kind will be frequently treated as simple typhlitis, whereas in 90 per cent., or perhaps a larger proportion, they are cases of inflammation of the appendix.

APPENDIX.

The following notes are presented explanatory in a measure of the text. They are based on the appearance of the specimens the writer had on exhibition at the meeting, collected from private sources and from hospitals. Some twenty specimens were obtained for this purpose. The writer's best thanks are due to Drs. Pepper, Edwards, Bernardy, Willard, Woodbury, Longstreth, Hinsdale, Seltzer, Daland, Bodamer, and others, for notes and specimens. Some excellent descriptions may be seen in the catalogue of the museum of the Pennsylvania Hospital.

I. Strictly speaking, we should say the sequence of typhlitis, perityphlitis, and peri-cæcal abscess occurs but rarely. A typhlitis and perityphlitis, no doubt, are seen clinically, but the cases do not come to the post-mortem table unless perforative appendicitis occurs conjointly. For this reason, and because similar sequences of lesions does not obtain in similar inflammations of the large bowel under like circumstances, as fecal impaction from stricture, or from paresis in the aged or after typhoid fever, the pathologist may well doubt the existence of perityphlitis and succeeding peri-cæcal abscess. In the more violent inflammations of the gastro-intestinal tract, in gastritis, enteritis, or in dysentery, such sequential lesions are not found.

II. *Case 1.*—Matilda Thomas, æt. 104 years. Cause of death, exhaustion of strangulated hernia. Abstract from autopsy record, Philadelphia Hospital. Abdominal cavity; no effusion; adhesion of large and small intestine; appendix dilated to size of first finger, end of it incarcerated in inguinal canal, with position of mesentery and small intestine; so much post-mortem discoloration could not determine color of parts; local peritonitis; in canal and layers of muscles and fascia considerable amount of greenish pus; the portions outside of canal adherent to the bladder, uterus, and ovary, the latter being included in the inflammatory mass. Organs occupy normal position. (Musser.)

Case 2.—Philadelphia Hospital. Female, æt. 22 years. Appendix four inches long, dilated to size of finger, contained mucoid fluid, adherent to a large pyosalpinx.

III. From Museum of Pennsylvania Hospital, described by Wistar. (See a catalogue of Pathological Museum, 1869.)

IV. Cranberry seed (Mears). Fecal concretions (Hart-Bodams, Daland, Hinsdale, Seltzer, Musser). Grape seeds (Edwards, W. A.). A concretion one-half inch long and one-quarter inch thick, cone-shaped, apex pointing toward the perforation of the appendix, base concave, firm fecal color and odor, in mass of which black bodies, size of cranberry seed were found. It completely occluded the canal, causing retention of the natural secretion, inflammation, ulceration, etc. The perforation was one-eighth inch from the apex of the concretion. Musser. A phlegmatic concretion in Mütter Museum. Woodbury.

V. General peritonitis (Woodbury, Willard, Hall, [Mütter Museum], Bodamer, [Case 1.], Seltzer, Pepper [163; Pennsylvania Hospital Museum], Longstreth [Pennsylvania Hospital Museum catalogue, No. 1368]), Meigs [Pennsylvania Hospital, 1366], Bernardy, Musser]. Local peritonitis (Mears, Pepper, Hinsdale, Bodamer [Case 2.], Hart-Bodams, Musser).

VI. Two inches of the appendix necrosed, slate-gray color, soft, floated in the pus, attached slightly to the healthy stump. Musser. Appendix sloughed off. Male, 40 years. Peritonitis fourth day, (Bodamer, Case 1.). Appendix one and a half inches long, ulceration one inch from bowel, a few lines in diameter. No communication between appendix and cæcum. Gelatinous mass in appendix (Bodamer, Case 2.). Appendix removed by amputation, was attached by its blind extremity to omentum, also removed. Length two inches, one inch occluded by concretions, and one dilated and empty (Woodbury, Mütter Museum). Appendix two and a half inches long. Ulceration three

lines in length and two inches in width, half an inch from extremity. Canal not dilated. Walls not thickened (Willard).

Mütter Museum, College of Physicians, of Philadelphia, A. D. Hall. V. A., cæcum and portions of ileum, perforation, peritonitis; death. When recently examined a perforating ulcer of the appendix was found, through which a grooved director could be passed, communicating freely with the peritoneal cavity. There are two perforations, one, 2.5 centimetres, from the caput coli, the muscular coating of the appendix appeared to have been destroyed by ulcerations, and then the peritoneal coat had given way in three small openings about 2 millimetres in line. These were arranged in a triangular manner. The second was a solitary perforation, 4 centimetres from the end of the appendix. Although thick patches of lymph had been thrown out, no attempts to limit the effusion of foreign material by lymph barriers was discoverable. There was nothing to show that any foreign body or concretion or impaction had been the origin of the lesion. Fluid pus was found in the inter-space between liver and stomach, and about six ounces of turbid serum were in pelvic cavity. The intestines were glued together.

Mrs. C. æt. 25 years, mother of two children, youngest four months old. Death on fifth day of idiopathic peritonitis, with characteristic symptoms.

Catalogue of Mütter Museum, College of Physicians, E. Hartshorne. Appendix, gangrene and perforations. Recently observed the appendix was inflamed and greatly enlarged, and intimately adherent to surrounding parts; was distended to a sac 5 centimetres long and 2 centimetres broad, and communicated by a small opening with the cavity of head of colon; walls thickened, infiltrated with dark blood and serum; its peritoneal coat highly injected and covered with exudation, and the mucous lining showing traces of extensive inflammation, which had run into a superficial gangrene. The latter had produced a honey-combed appearance of the inner surface, and had covered it with a dark greenish, pulpy, and extremely fetid matter. On its side, about two-thirds of the distance from the caecal extremity, an ulcerated perforation, some 6 lines in length and 3 lines in width, was found, from which fluid fecal and other matter had been flowing in small quantities. Immediately behind this opening, and encased by the appendix, a peculiar, moderately hard concretion, of the shape and color of an elongated olive stone, presented itself, having been apparently moulded by the cavity by which it was contained. This was in layers, and was probably hardened fecal excrement which had accumulated by slow oozing of the fluid contents of the large intestine through the small orifice of the distended appendix. No other evidence of morbid action in abdominal cavity, except congestion and œdema of ovaries and fimbriated tubes. Death on the fifth day from peritonitis.

THE DIAGNOSIS OF PERI-CÆCAL INFLAMMATION.

*Read before the Philadelphia County Medical Society,
December 14, 1887.*

BY WILLIAM PEPPER, M.D., LL.D.,

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I fear that the remarks that I shall make may seem vague and desultory, for it is difficult to compress what is to be said within the very reasonable limit assigned. I am quite willing to accept the terms suggested by Dr. Musser, but I do not think that the term paratyphlitis, as indicating inflammation of the peri-cæcal connective tissue, is likely to gain general usage. It is probable that the term peri typhlitis will continue to be used to indicate inflammation of the walls of the cæcum, and of the neighboring connective tissue. Still, anatomically and for purity of nomenclature, it may be well to recognize para-typhlitis, as indicating inflammation of the peri cæcal connective tissue.

The anatomical points made clear by Dr. Musser, are very striking. I would merely add to these one

or two facts. In the first place, the appendix presents evidences of a disease in a very large number of indifferent autopsies. I remember the report of a series of 300 autopsies, in which there were signs of disease of the appendix in 33 per cent., although in none of these was there a history of typhlitis.

We have this little organ, singularly useless physiologically so far as we know, placed in a singularly unfavorable position anatomically, very liable to become impacted, so formed that escape of its contents is very difficult, and very prone to become diseased. We must recognize the fact that the appendix is often diseased when we have no reason to suspect such a condition. I cannot agree, however, that the cæcum also is not often the seat of disease. In a long experience in which I have paid much attention to these diseases, I have collected a number of instances of independent cæcal disease, where the cæcum alone presented lesions, sometimes going on to chronic inflammation, ulceration, and perforation. The real condition of things seems to be this: In the first place, there are many cases of mild appendicitis which cannot be recognized during life; in the second place, there are a considerable number of cases of typhlitis where the symptoms are chiefly due to inflammation of the walls of the cæcum and of the peri-cæcal connective tissue, which end in recovery. It is impossible in these cases to determine what proportion has been due to appendicitis. Finally, there are also a good many cases of severe appendicitis resulting in ulceration and perforation, with the formation of circumscribed abscess or of general peritonitis. If we could accept the view that perforation of the appendix, leading to perityphlitis or para-typhlitis often resulted in recovery by resolution, it would be a matter of comparative indifference where the lesion was chiefly situated; but do clinical experience and anatomical records justify the view, that perforation of the appendix, followed by peri- and para-typhlitis, often ends in resolution? It is true, that I have found one specimen, and that others have been placed on record where perforation of the appendix has not been followed by grave results, but do these amount to anything comparable with the great mass of cases where lesions of the appendix have occurred with peritonitis and fatal result unless relieved by operation. It seems to me that we have to recognize that while in typhlitis, peri-typhlitis, and para-typhlitis, in all probability appendicitis always exists, yet it is often present in only a very mild degree, and can cause only a small portion of the symptoms. This conception seems necessary to a correct diagnosis of these lesions; it is necessary in guiding our treatment.

There appear, then, to be two classes of cases. In one the affection is more limited to the walls of the cæcum and the peri-cæcal connective tissue, and the appendix is affected to a comparatively slight degree. We have no record as to the frequency of such cases. The record is not to be sought on the post-mortem table, for the large proportion of these cases, if properly treated from the beginning, end in resolution. I have the records of scores of such

cases, the vast majority of which ended in resolution. I think the experience of those I address would give a large number of cases of inflammation in the cæcal region so terminating. So large is the number that I cannot consider that in any large proportion of them did perforation of the appendix occur. As I have seen them, these cases are marked by pain as the initial symptom, not excruciating in character, nor associated with the evidences of collapse, often accompanied with nausea and vomiting, and with elevation of temperature, which continues to rise until decided fever is present. With these symptoms there is excruciating tenderness in the right iliac fossa, a sense of fulness and induration, not rarely with dorsal decubitus and flexed thigh, with a constipated condition of the bowels possibly preceded by one or two irritative movements during the first day, and with these there is considerable acceleration of the pulse. In proportion as the induration and swelling is early and marked, it has seemed to me that the chances are that the appendix is not seriously involved, but that the affection is chiefly one of inflammation of the walls of the cæcum and of the peri-cæcal connective tissue with exudation, and I have no doubt usually accompanied with considerable faecal impaction of the cæcum.

If absolute rest be insisted upon, if abstinence from food and absolute avoidance of interference with the state of the bowels be adhered to, if local depletion be employed, if counter-irritation followed by the application of the ice-bag, or warm fomentations be employed, and if the internal use of opium and mercury be begun early, the vast majority of such cases terminate in resolution and complete recovery if the convalescent is properly treated—that is, if these restrictions be insisted upon until the sensibility of the part is entirely removed. I am satisfied that the well-known tendency to the recurrence of typhlitis is largely dependent upon the management of the convalescence from the primary attack. Such would seem to be the diagnostic marks of this type of case.

On the other hand, we know very well that such cases do not rarely go on without resolving, that the induration extends, that the symptoms become aggravated and possibly are such as to indicate suppuration, and that at periods varying from seven to fifteen days pus formation occurs. Such cases demand operative interference, and are successfully treated by the Parker operation. The existence of pus can often be demonstrated by exploratory puncture with a fine aspirator needle.

There is a second class of cases of an entirely opposite character, with which we are all equally familiar. Here the patient may apparently have been in almost perfect health, for perforation of the appendix may occur without any previous symptoms of which the patient had complained. But in these cases there has been a catarrhal appendicitis; the faecal matter which is present in nearly every healthy appendix, is no longer able to circulate and escape, because the outlet is partially closed by the swelling of the mucous membrane; the pent-up secretions,

and the irritating faecal matter excite more serious inflammation in the walls of the appendix; ulceration is established, and finally, perforation occurs, and the symptoms of the attack begin. I have rarely seen a fatal case of disease of the appendix where there was not stenosis of its orifice. I think that, to a large extent, it is this tendency to closure, and the accumulation of the secretions and of faecal matter, that causes the more serious type of inflammation and the occurrence of perforative appendicitis.

The first symptom in these cases is usually intense and excruciating pain, so severe at times as to cause collapse, occasionally so severe as to be followed by death in a few hours. Following this there is the rapid development of the signs of peritonitis. The pulse becomes frequent. There is marked tenderness, not in the iliac region only, but also toward the middle of the abdomen. The belly becomes distended, but there is no induration to be felt; there may even be no fulness in the right ileo-cæcal region. The appendix often lies under the cæcum, and I have frequently percussed these cases with great care without finding any evidence of dulness or of induration. After the occurrence of the initial pain, the fever may not rise very rapidly. There may be only moderate febrile reaction for one, two, or three days, associated with continued, moderate pain simulating an ordinary catarrhal attack with intestinal colic. For two or three days these cases may be viewed as not being seriously ill, so delusive may be the symptoms after the subsidence of the initial pain. In these cases there is absence of ileo-cæcal infiltration, or induration, or tumor, or prominence, or dulness, on percussion. There is in these cases a less degree of vomiting than in the first class of cases mentioned. The vomiting is often rare, and only induced when the stomach is taxed. The bowels are quiet, but not so obstinately constipated and not so strongly resistant to the action of laxatives as in typhlitis, with more or less impaction of the cæcum. After a time which varies with the intensity of the attack, and the direction which the exuded matter has taken, there appear the symptoms of a rapidly spreading, general peritonitis. The belly becomes greatly distended and tender, the coils of intestines are outlined through the tightly stretched skin. The vomiting becomes frequent, the temperature rises, the pulse grows thready and rapid, and we have the familiar signs of general peritonitis. These cases end fatally, from exhaustion, in from five to ten days.

Here are two groups of cases which seem to me to differ not only in degree, but also to differ in the seat of their lesion and the character of that lesion. I cannot believe that in any great number of cases of the first group there is perforation of the appendix. Yet, unless perforation is present, we have seen that all the other lesions of the appendix may exist without the production of any symptoms. Therefore, I cannot attribute to ordinary appendicitis the symptoms of peri-cæcal inflammation which mark the first group of cases. These symptoms we must assign to the inflammation of the walls of the cæcum and of the peri-cæcal connective tissue in chief part.

It is, therefore, of momentous importance that we should be able to diagnose the sort of case that we have to deal with, and that at the earliest moment. I should say, that in proportion as the tumor, prominence, induration, and dulness are marked, delay is safe, especially if rectal examination—the mention of which I have postponed until the last—does not indicate any fulness on the right side of the roof of the pelvis. If this is present, it indicates an amount of exudation which will end in abscess, and is a strong indication for operation. If digital examination, pushed if necessary to the extent of the introduction of the whole hand, reveals no fulness in the roof of the pelvis, I think delay for several days is justifiable, and with such treatment as I have indicated, the symptoms will, in the majority of cases, subside; and although the case is fraught with great anxiety, resolution will begin, the symptoms will become milder, and the patient recover, and under proper treatment the part will be restored to absolute health without relapse. Even if frequent relapse occur—and I have seen as many as fifteen or eighteen in the same individual—complete recovery may follow a protracted course of treatment with absolute rest, rigidly restricted diet, constant counter-irritation, and suitable alternative treatment internally.

Of course, if after waiting a few days, there is no evidence of the commencement of resolution; if the fever is sustained, particularly if it assume a hectic type, we know from experience that suppuration will not be long postponed. Exploratory puncture should be made, and operation should follow without delay.

The most important question to be considered is: What is the earliest moment that we can establish the diagnosis? On account of the shortness of the time, I limit myself to the differential diagnosis between the two forms of cæcal inflammation to which I have referred. The initial symptoms give us some indication of the seat and the gravity of the attack. Typhlitis and peri-typhlitis soon offer demonstrable symptoms, but as the appendix is hidden under the intestine, the symptoms of perforated appendicitis are often obscure for two or three days. The most careful palpation may fail to show the slightest fulness. The patient may complain of pain over the cæcum, or over the hypogastrium. External examination does not aid us in the diagnosis. Are there any special features which will help us? I would again refer to the importance of the rectal examination. Early and oft-repeated rectal examination is the most important diagnostic means we possess in this class of affections. Often, on opening the body after death, there is no appearance of peritonitis in the exposed coils of intestine. There is no inflammatory process seen outside of the cæcum, and nothing is found until the cæcum is lifted up, when it is discovered that the inflammation is behind it, and extends downward to the pelvis. Sometimes, on removing a layer of lymph, you disclose the pelvis filled with pus. In such cases, if rectal examination should give a sense of distention of the right side of the pelvic roof, might not a puncture be made with a curved exploring needle introduced

through the rectum? This has suggested itself to me, although I have never tried it. In this way we might demonstrate the presence of pus, when it would not be possible to do so through the external abdominal wall.

In many of these cases there has seemed to be an unusual abundance of urine and an increased frequency of urination. I think that the former is associated with the absence of vomiting. In typhlitis and peri-typhlitis, there is often so much vomiting that very little liquid is absorbed, and the urine becomes concentrated. I have seen cases of perforation of the appendix, where the urine was voided at intervals of an hour or an hour and a half, the total amounting to a large quantity.

Again, it has seemed to me that in perforation the pain is more apt to extend to the middle line of the abdomen, and sometimes into the genitals, especially into the right testicle and spermatic cord.

The agony of pain which marks the initial lesion, the development of fever, the acceleration of the pulse, the distension of the abdomen, the pain referred to some point in the ileo-cæcal region, the comparative rarity of vomiting, the absence of induration and tumor, possibly, the ability to detect fulness or induration in the roof of the pelvis by rectal examination, the frequent micturition with a free supply of urine, the pain possibly radiating in the direction of the genitals, have, I think, been in the majority of cases, the most marked symptoms.

Suppuration occurs in these cases very early, even earlier than in the other group of cases. In one case in which Dr. Keen operated for me early as the close of the third day, perhaps the earliest operation on record, a pint of pus was found in the pelvis.

So much for the suggestions that I am able to offer with reference to these important affections. The point to which we should bend our exertions, should be to determine the early diagnostic symptoms of these two varieties of cæcal inflammation, to see whether there is a constancy in the description that I have given of the first type of inflammation of the walls of the cæcum which, under proper treatment, offers a considerable hope of recovery. We should, in particular, strive to point out the indications for operation in the two classes of cases.

I would ask if general peritonitis may not be a positive indication for instant operation. It has been asserted that general peritonitis is not a contra-indication to laparotomy under other circumstances. If this is the case, the development of general peritonitis in a case of inflammation of the cæcal region would at once indicate operation, for after this develops death results under medical treatment.

I will not take up the question of the diagnosis of these affections from intussusception and internal strangulation. Although this would be necessary for a comprehensive discussion of the subject, the time at our disposal will not permit it on the present occasion.

THE TREATMENT OF PERI-CÆCAL INFLAMMATION.

Read before the Philadelphia County Medical Society, December 14, 1887.

BY THOMAS G. MORTON, M.D.,

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For practical purposes the treatment of peri-cæcal inflammation must be divided into two subdivisions: that of the pre-purulent, and that of the post-purulent stage; or, first, before formation of pus or of appendix perforation; and, second, after that event.

The treatment of the pre-purulent, irritative, or simple inflammatory disorders of the cæcum and its surroundings, or appendix, should consist of rest in bed, restriction of diet to nourishing liquids, hot poultices or fomentations frequently replaced upon the parts, perhaps local depletion, and possibly the hypodermatic exhibition of morphia to control pain; whilst the bowels should be kept open and free from accumulation of gas and feces by the administration of salines and enemas—perhaps with the addition of turpentine to the latter.

Those disposed to cavil at the advice just given I would ask: Shall we keep the bowels in liquid condition, and so prepared to best resist peritonitis, should it occur, whilst at the same time the mere draining of fluid from the intestines and surrounding parts would influence for the better the peri-cæcal inflammation? or shall we paralyze, and congest, and inflate the bowels by the old-fashioned "splinting" treatment, and thus beckon on peritonitis?

Pain of intense character would often be as much an indication for operative relief as for morphia.

Prompt resolution should take place in cases which are not to go on to the stage of pus formation; and very long continuance of symptoms, or relapses, or recurrences, would be strong indications for surgical interference.

The presence of such tedious recovery, relapse, or recurrence would point to the probable presence of conditions exceedingly dangerous to the patient from liability to general peritonitis or perforation at any time; they further would point, as a rule, to the appendix as the source of irritation and danger. Indeed, in man, that worse than useless appendage must be regarded as the root of most evil in the region under consideration.

To illustrate this point by a single impressive instance, let me quote a case which was reported by me in the *Philadelphia Medical Times*, of June 11, 1887. It was that of a woman who for a long time, had been having mild attacks of abdominal pain, located in the region of the cæcum, which had usually yielded with great promptness to anodynes. During the course of the last attack of that nature, violent symptoms of perforation and general peritonitis came on. I did not see her until two days after this unfortunate accident; but, though she was then in a most desperate condition, I advised operation as her only chance, and forthwith performed abdominal section. The appendix was found perforated in two places, and violent general purulent peritonitis going on. She died a few hours afterward, but I felt better satisfied that the operation had been performed.

Coming now to our second division, suppose the process to have gone beyond the simple, inflammatory stage, and the presence of pus, even a few drops, to have been diagnosed.

In the great majority of instances, the presence of even a minute amount of pus so near to the peritoneum would be of vastly more risk to the patient than that of abdominal section for its relief. Hence, I should operate whenever the diagnosis of pus had been made—occasionally even without positive diagnosis. But in this paper diagnosis of distinct conditions is presumed, and I am expected simply to outline treatment for those defined conditions; hence, without qualification, I repeat that, pus being present in the region of the cæcum, operation is positively indicated.

Many other risks are to be taken rather than those of purulent peritonitis, for early interference will save most, if not nearly all cases from this latter dread complication, while the danger of operation becomes slight compared to that of rampant abdominal inflammation.

Local or general peritonitis supervening in a person that has a history of cæcal trouble, or starting during a first attack, would more than justify operation.

At a later, or even perhaps chronic stage of the disorder, all available diagnostic skill must be exerted when a peri-cæcal abscess may have pointed in an anomalous situation, and we must ever adhere to the modern surgical rule, always to attack pus at its source if possible. When the cæcum is normally placed, this is always feasible, if the disease be recognized.

Coming now to speak of actual operative measures, the patient, as a matter of course, must be got into the best possible condition, and surgically clean by the usual methods of attempting these ends. Asepsis should rigidly prevail throughout.

The aspirating needle must never be used, for if it does not find pus we cannot be sure that none is present, whilst its own dangers are not inconsiderable. In these cases it is a poor and especially unsafe diagnostic resource.

The abdominal incision should be lateral, *not* median. For if median the peritoneal cavity would often be needlessly opened, and the cæcum and appendix cannot well be reached or dealt with through it. But if lateral it can be made of less size, circumscribed abscesses will frequently be found before the peritoneum is reached, and at its base all necessary manipulations can be made upon the cæcum, appendix, and surrounding parts without opening the peritoneal cavity, whilst should the abscess or ulcer have reached that cavity, the intestines, etc., can just as well be examined and cleansed through a lateral as a median incision.

Attempts to reach the cæcum by the lateral or subperitoneal incision without opening that membrane will nearly always be found impossible to carry out, and even should the organ be so reached lesions cannot be properly dealt with at the bottom of such an opening.

The favored or lateral incision should begin at a point an inch above Poupart's ligament and to the

outer side of the right linear semilunaris, be continued in a vertical direction upward about four inches, and carried down through the parietal muscles until pus, cæcum, or peritoneum encircling that organ be reached. Then the wound can be enlarged if necessary. If pus be found, wash its containing cavity clean, and get a clear view and careful examination of the cæcum and appendix. The latter is almost always the seat of trouble, and perhaps it would be well to excise it whilst we have the chance in any case, for any cæcal trouble would be likely in time to excite disorder of its appendages. Without a doubt it should be so treated if found inflamed, perforated, or harboring a foreign body. This can best be accomplished by ligating it as close as possible to its cæcal attachment and cutting it off. Cæcal perforations, if found, should be closed by Lembert sutures, whilst ulcers, which may be present but have not perforated, should by the same means be turned into the bowel lumen. If the general peritoneal cavity has not been involved, the abscess or cæcum or what not in view should be gently curetted, washed out with a 1 to 1,000 bichloride of mercury solution, a large glass or rubber drain introduced, and the abdominal wound closed around it with silk sutures, and a dressing superimposed.

If the peritoneum has become involved and but a short time before the operation, the whole abdominal cavity must be most thoroughly washed out with hot (105° to 110°) distilled water, or 1 to 10,000 bichloride of mercury solution, and cleansed with sponges, and the foreign body, if that has been the source of trouble, searched for. Should peritonitis be found further advanced the intestines must be withdrawn, and all adhesions parted with the finger or knife during the process of cleansing, and before they are returned to the peritoneal cavity. In the case of general peritonitis a glass drain must be carried to the bottom of the pelvis and kept in working order by means of absorbent cotton ropes acting by capillarity. If a second tube is not used for the superficial or peri-cæcal abscess cavity, the drain going to the pelvis must have perforations as high in it as the level of the cæcum and any surrounding trouble.

If the inflammation should be caused by the presence of a foreign body in the cæcum itself or by impaction of feces, they must be either excised or urged by prudent force along the bowel. In their operative removal a simple incision, afterward united by Lembert sutures, would answer every purpose.

If portions of the cæcum have sloughed or become gangrenous, and the breaches of continuity are too large to approximate with Lembert sutures without producing dangerous constriction of the gut, we will have to content ourselves with the formation of an artificial anus.

Post-operative treatment would consist in keeping the bowels in a fairly soluble condition, the tube clean, and in meeting threatening peritonitis by active purgation.

These same general principles of treatment will hold even for those rare cases of displacement of the cæcum as into scrotal and other hernia, its abdominal transposition, etc.; the great question in these cases will be diagnosis.

Typhoid cæcal or appendicular inflammation or perforation likewise should receive identical treatment as for the simple inflammatory disorders of that region. This whole subject is still in its infancy so far as the majority of the profession are concerned, but the child is of almost boundless promise.

I can terminate this going over the field of cæcal inflammatory disorders, their pathology, diagnosis, and treatment in no better way than by showing to you the patient whose case was reported to you by Dr. Woodbury in April last, and upon whom I operated. He has been benefited as much by the practical application of the principles of treatment which have been laid down, as any human creature ever can be.

FERRI OXYDATUM VERSUS FERRI MURIATIS TINCTURA.

Read before the Cincinnati Academy of Medicine January 17, 1887,

BY WILLIAM JUDKINS, M.D.,

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A short time ago, in the discussion following a valuable paper read before the Academy, I suggested the administration of dialyzed iron to children. Exception was taken to the suggestion by a distinguished member, claiming it was worse than useless (or words to that effect).

We have with us, "as in the medical profession at large and in other spheres of human thought and action"—as a recent member of this body, with an international reputation, remarked in a lecture a few days ago—"two opposing parties, the optimists and pessimists, the orthodox believers and the Nihilists. The former accept everything unhesitatingly, the latter deny everything and ask for proofs, but they do not apply the Socratic method further, for when the proofs are forthcoming they continue to deny." A position of mere negation settles nothing. The scriptural injunction, "to try all things and hold fast to that which is good," is the true position for us to assume. Hence I have thought it of sufficient importance to call attention this evening to the relative merits of iron in the two modes of preparation, dialyzed iron, and the muriatic tincture, for it was the last formula that was advocated as preferable to that of the dialysate. What do we have? In the one a neutral solution of oxide of iron in the colloidal form, the result of endosmosis and diffusion with distilled water, elegance itself. In the other a combination of metallic iron, muriatic acid, alcohol, nitric acid, and water; repulsive to the taste, injurious to the teeth, of uncertain potency and benefit, of uses for one only, a so-called tonic. With the dialysate we have a pleasant and tasteless combination, harmless to the enamel, of uniform strength, of marked efficacy, useful as a tonic, astringent, as well as an ever ready antidote to that rapidly death-dealing poison, arsenic.

If you will pardon me I will call attention in part to a paper read by me in the winter of 1877-78, be-

for the Cincinnati Medical Society, an abstract of which appears in the *American Practitioner* for 1878, Vol. 17, page 294. In that article mention is made of 19 cases, including some in the "Children's Home," which for the time was under my care, during the absence of the regular attendant. Those reported cases were in infants from 2 months to 2 years and 9 months old, all of a diarrheal nature. All were treated with the dialysate, and the results were uniformly the same; a complete restoration of the secretions of the alimentary canal within 24 to 48 hours. Since presenting these cases, others in which the iron has been ordered have been seen time and again, not only of summer diarrhoea of children, but many cases also in adults.

During the last few months of my service at the Home for the Aged, two gallons of this useful and pleasant form of iron were administered to the inmates of that institution, none of whom were under 60, many over 70, and not a few beyond four score, one being in her 93d year. At the time of my resignation, and when sufficient time had elapsed to show a change in their condition, all, with two exceptions, showed and proved marked improvement by their appetite, general condition and weight. The exceptions were due to negligence on the part of the nurse in one case, and to the neglect of the other patient to take his medicine. The exact number and ages I do not remember, but the greater number were ordered the medicine, and most of them had suffered in early years from taking the acid preparation of iron made by the old formula.

Mention must be made of one case, a woman, æt. 78 years, who had been an inmate but a short time when she was taken sick with her ninth attack of erysipelas in fifteen years. The only medicine given was dialysed iron; liberal doses were given every two or three hours, with the result, according to her account, of cutting short the attack some five or six days, and, in her opinion, preventing the loss of her hair, which heretofore had invariably fallen out when convalescing.

One, if not the principle, objection to the muriatic tincture of iron, is its want of uniformity. It is only efficacious as a remedial agent after having been six months in preparation. Several others develop in which the efficacy of the drug is found. As it is made now by a large number of druggists a cheap solution of ferric chloride is purchased and diluted, some even diluting the spirits. This is due to the decline of legitimate pharmacy, and the rise of commercial manufactures. I have found that all kinds of iron are used in the early steps of this manufacture; scrap iron, iron horse shoes, old iron, and in fact all kinds except the best cut iron-wire. It has been asserted that if twenty samples of the tincture were taken and evaporated down, no two would be alike in the amount of iron scales left as a residue. One sample was shown that was merely diluted muriatic acid, with enough coloring matter to give it the proper shade, so that it would be difficult for any but an expert to distinguish it from an official preparation. The nitric acid that is used, as a rule, is so highly adulterated that cases resembling

arsenic poisoning have been known, due to the impurity of that article.

As an antidote for arsenic we have an ever ready and efficacious remedy in the dialyzed iron. Dr. Thos. B. Reed, of Philadelphia, reported about the first case, now several years ago, in which a fatal dose of arsenic was taken by mistake, but the patient was saved by the prompt administration of dialyzed iron. Dr. Wm. B. Hazard, of St. Louis, Dr. Crenshaw, of Richmond, Va., and others, have been successful in cases of arsenic poisoning by the timely use of this antidote.

As to the value of dialyzed iron as a prevention to poisoning of those exposed to the inhalation of air impregnated with fumes of arsenic, I can give as proof of its efficacy an extract of a paper by Dr. Ballard, of Wicks, M. T., that appeared in the *Medical and Surgical Reporter* recently. He says:

"In the smelting of lead and silver ores, one of the worst features is the constant inhalation of arsenical fumes. When first employed by the Alta Montana Co. to take charge of their hospital, a number of cases of arsenic poisoning came under my observation, and they were the more difficult to treat on account of their complication with 'leading.' I tried the various remedies recommended for such cases, with but poor results. At times I felt that the old saying, 'throw physic to the dogs,' was but too true and applicable. At last I was led to try dialyzed iron, and met in all cases with most gratifying success, as is evidenced by the following cases:

"Two carpenters were engaged in roofing a portion of the smelting building, and were in such a position that the wind carried the fumes into their faces. Some workmen below noticed one of the men swaying to and fro, and about ready to fall, while the other was laboring hard to reach the ground. They were helped to the hospital, and were suffering with severe pain in the stomach and bowels, nausea, vomiting, vertigo, and with a profuse nose bleeding, tremor in lower limbs, and almost prostration. A wine-glassful of dialyzed iron was given immediately. The nausea ceased, and at the end of one hour the men were able to walk to their cabins, carrying with them a bottle of the iron, to be taken in drachm doses, every half hour. At the end of twenty-four hours they complained only of weakness, such as would result from a severe diarrhoea. The second day they resumed work, entirely free from all pain and effects of the arsenic. A number of men employed about the smelting furnaces, and especially in dipping the molten lead, have been apparently prostrated by the effects of the fumes, and were in every case relieved by dialyzed iron. A mild purgative was given within twelve hours. I have recommended and, indeed, insisted on every man who is exposed to the arsenical fumes taking a dose of the iron daily. The consequence has been that we have had but one case of poisoning needing hospital treatment, and this one insisted that his case was one of indigestion and dyspepsia, and would take nothing till compelled to enter the hospital, where, under the administration of dialyzed iron, he speedily recovered.

"In the past two years I think I am safe in saying

that fully 200 cases of arsenical poisoning have been cured in this camp by dialyzed iron. I could cite any or all of them, with symptoms, treatment, etc., but I think it unnecessary, as they so nearly resembled those already mentioned; suffice it to say, that all experienced the nausea, griping, vomiting, muscular tremor, etc. I have given the iron, in half ounce doses, three times daily, with no constitutional disturbances whatever, even after ten or twenty days' administration. The teeth are not discolored, bowels not constipated, and digestion not deranged.

"The men have learned its virtues, and come regularly with 'please fill my iron bottle again.' They will not do without it, any more than an Irishman will do without his salts and senna. It has saved many a man his wages and many a day of sickness. In fact, I feel convinced that this preparation is indispensable where men are liable to inhale the fumes of arsenic.

"Without a remedy of this kind, I am satisfied no man, however strong, could inhale the fumes incident to smelting, where the ores contain arsenic, and stand it more than three or four days. I can fully and confidently recommend this preparation of iron to the profession, and even to foremen of smelting works where there is no physician, for it is harmless and invaluable. 'An ounce of prevention is worth a pound of cure;' or, a 'pound of cure' is worth infinitely more to a company than are hospitals full of men poisoned with arsenic. Our hospital has been built, medicines bought, physicians and nurses paid, and accommodations for thirty beds provided, inside of two years, by a small monthly assessment on each miner and laborer employed by the company; and all are satisfied, none more so than the smelter hands, who can and do get a 'bottle of that iron' and keep at work."

For the purpose of pursuing this interesting subject further, I procured a full-grown jack rabbit, and with the assistance of my friend, Dr. John D. Jones, President of our State Board of Health, administered poisonous doses of the arsenious acid. Before commencing, the animal was firmly secured and a barbed arrow introduced into the pericardium by which the heart's action was noted; 135 beats, full, per minute, was apparently the normal state. One-half a grain was given *per os*, with the result of reducing the heart's action to 120 per minute, although no decrease in fullness was noticed. In five minutes another dose was administered in the same manner, through a glass funnel, with the result of still further reducing the pulsations to 112, and making them somewhat less full. Some convulsive movements were manifested at this time. The next dose was given endermically, reducing the heart's action to 10 and quite feeble; convulsive movements more marked and some squealing. At this time we administered 3 fluid drachms of the iron with an equal portion of water, and soon noticed an increase in the heart's action, and more quietude in movement. 2 fluid drachms of the iron were again given, diluted with water, after an interval of twenty minutes, with the result of gradually bringing the heart's pulsations up to 130, but not quite so full as before the experiment commenced.

Though undoubtedly a poor subject, as we could only have the objective symptoms, the iron certainly gave the desired relief, namely: cessation of the excessive convulsive movements and a return of the heart's action almost to what it was when the animal was running over the office floor, before commencing the operation.

To still further convince any doubter, by letter and by personal inquiry I have been enabled to learn of a number of the active practitioners of our city who are in the habit of ordering this drug, among whom are Drs. C. D. Palmer, G. Bruhl, Thaddeus Reamy, Giles Mitchell, B. F. Clark, — McMechan, F. Forchheimer, W. H. Taylor, R. Sattler, J. D. Jones, N. P. Dandridge, — Schmidt, J. T. Whittaker, C. G. Comegys, E. W. Walker, Wm. Carson, A. G. Drury and others.

In the East we find as earnest advocates of the use of dialyzed iron, such as Drs. Weir Mitchell, John H. Packard, and Wm. Pepper of Philadelphia, and Emmet, who in his "Diseases of Women" (p. 549), in speaking of fibrous growths says: "In the treatment of two cases recently I have been particularly pleased with the marked improvement following the use of dialyzed iron. In both instances other forms of iron had caused headache and constipation, and an unexpected loss of blood."

I trust that facts enough have been brought forth to prove the efficacy of the drug, and that a faithful trial will convince the most skeptical of its benefit to those under our charge. I can but think that Henry O. Marcy, of Boston, struck the keynote of truth when he said: "The landmarks of our fathers have become of small value; in these days of careful inquiry and patient research, of radicalism and reform, little respect is now paid to dogmatic teaching. Old truths are reexamined, sifted from error, and associated with new facts in such a way that new teachings are evolved, and the 'thus far and no further' of even our student days is no longer heeded."

216 Race St.

MEDICAL PROGRESS.

PROLONGED SURVIVAL AFTER EXTENSIVE FRACTURE OF THE PELVIS.—DR. S. D. HOWARD, of Elk Grove, Cal., reports the following case: On October 31, 1887, T. W. was working in a gravel pit when the bank, which rose above him about twenty feet, caved. A mass of earth, that must have weighed about 300 pounds, struck him over the lumbar and gluteal regions, throwing him against the hub of a wagon wheel which impinged on the pelvis in front. He was taken out by his companions and brought to town in a cart. When seen half an hour later he was suffering from shock and complaining of intense pain in the right ileac region, any movement of the parts being attended with agonizing pain. An extended examination was impossible; I could, however, feel distinct crepitation on the right side, and concluded that there was a fracture of the ilium. Patient was placed under the influence of opiates and rested comfortably. During the afternoon, as

he was unable to pass water, I introduced a No. 6 silver catheter. The instrument apparently entered the bladder without difficulty, but no urine escaped; blood, both fluid and in clots, came away quite freely. The bladder did not appear to be distended, and no further attempt was made until late in the evening, and then with precisely the same result. The following morning the bladder was distended, and, though anxious to make water, patient did not appear to suffer greatly from this cause. I again introduced the catheter, but failed to enter the bladder. Blood came through the instrument, and during the night some had flowed from the penis. I then believed that the right kidney had been injured, and that the bladder was full of blood. At noon that day Dr. J. H. Parkinson saw the case with me. Patient was fully anesthetized (on the previous occasions I had given chloroform to partial insensibility), and examined. The bladder was distended, reaching almost to the umbilicus; the abdomen on either side was resonant. Repeated attempts with various instruments completely failed to enter the bladder. It was noticed when using a large silver instrument, that the point had a tendency to turn to the right when in the neighborhood of the prostatic urethra. On this occasion, also, blood escaped freely from the passage. As it was evident that the urethra had been lacerated, and that operative treatment was imperative, he was removed to the County Hospital for better facilities.

On admission, Dr. White succeeded, without much difficulty, in introducing a catheter; but though several sizes were used, large clots of blood choked the instruments so that little urine was obtained. It was decided to perform a perineal section, and the patient was placed on the table and anesthetized. The patient being placed in the lithotomy position, a large double current catheter was introduced, when the urine flowed freely. This rendered the operation unnecessary and the instrument was tied in, the bladder having been first thoroughly irrigated. A careful examination then showed that there was a fracture of the right pubic bone, crepitus being distinctly obtained with one finger in the rectum. It was also apparent that there was extensive laceration of the urethra, implicating the wall of the bladder. The catheter was kept in position for four days, antiseptic irrigations being used twice daily. After this the instrument was withdrawn, the urine passing freely by the urethra. The injections were continued—solution of corrosive sublimate 1:3000 at first, and, later, solution of carbolic acid 1:100 being employed. Mucilaginous drinks were given freely with quinine and opium, the latter very freely. A broad band of adhesive plaster was passed round the pelvis and over it a muslin bandage. During micturition, and when the bladder was irrigated, clots of blood, small shreds and muco-pus passed away. On November 10, patient had a chill, and on the following day there was oedema of the thigh. On November 12, the oedema was more marked; distinct fluctuation below Poupart's ligament and extending through the tissues of the thigh was apparent. To relieve tension two incisions were made

on the outer side of the thigh, nothing but serum escaping. On November 13, fourteen days after receipt of injury, the patient died, evidently of septicæmia.¹

Autopsy.—Made November 14, by Dr. White. Body emaciated; marked oedema of the right lower extremity; two incisions on external side of thigh. On opening the abdomen there was evidence of general peritonitis; the omentum was congested; a large ecchymosis, representing blood, effused behind the peritoneum, extending completely across the posterior wall. The descending colon, throughout its entire length and including the rectum, appeared to have been badly bruised. The inferior margin of the liver had the same appearance; also the right ureter. The right kidney was deeply congested, but uninjured, and the urine in its pelvis and ureter was clear. The left kidney was intact. On prolonging the incision down to the pubis, separation of the symphysis was found to the extent of one inch. Extending the incision outwards to examine the femoral canal on the right side, a comminuted fracture of the transverse ramus of the pubic bone was exposed. The bone was bare, one of the fragments projecting into the bladder. The anterior and superior wall of the bladder was absent, its place being supplied by the adjacent tissue; the viscus contained a small quantity of grumous matter, some of which could be identified as fibrin; the walls were covered with black tenacious mucus, the parts having a greyish-black appearance. There was a free communication through the femoral canal, between the bladder and a cavity in the anterior and internal aspect of the thigh, extending downwards for about six inches; this contained urine, unhealthy pus and tissue *debris*. An examination of the perineum and urethra showed that the membranous and prostatic portions were absent, being replaced by a cavity communicating with the bladder, and also with the cavity in the thigh, allowing a sound introduced *per urethram* to pass readily into the femoral canal. Further examination revealed the fact that there was a comminuted fracture of the right ischium at its junction with the ilium; symmetrical fractures of the left pubis and ischium, also comminuted; and a fracture of the sacrum on each side, close to the sacro iliac synchondrosis. There was no attempt at repair in any of these fractures. The parts were subsequently removed, and, in the process of cleaning, it was discovered that the third sacral vertebra was fractured through its body, and that a vertical fracture completely separated the laminae and spinous processes of the first, second and third vertebra from their bodies. —*Sacramento Medical Times*, January, 1888.

LANDAU ON ULCERATIONS OF THE FEMALE URETHRA.—DR. LANDAU discusses the different forms of ulceration of the urethra in women and their causes—mechanical injury, parturition, diphtheria, bacterial infection, gonorrhœa, chancre, tubercle—and adduces five cases of what he calls "ulcus rodens urethræ." This consists of a process of ulceration

¹ I am indebted to Dr. White for these facts, as well as for the notes of the autopsy.

which slowly and continuously destroys the walls of the urethra but not the adjacent tissues. It gradually extends from the urethral orifice towards the bladder, and only ceases when the whole extent has been involved. There is no tendency to new formation, nor to healing. For a long time it gives rise to so little inconvenience that the patient is quite unaware that there is anything wrong until the occurrence of marked suppuration, or of incontinence of urine attracts her attention. On examination, the meatus urethrae is found covered with pus and studded with a number of uneven swellings, between which are deep fissures, and thus the canal is rendered uneven. These swellings resemble pointed condylomata, are soft to the feel, bleed very readily when touched, and often fill the urethra as far as the neck of the bladder. If the finger is introduced a rough surface is felt, and the canal is found to have become narrower towards the bladder, so that it seems to be conical in form, the apex of the cone being towards the bladder. From the vagina the urethra and perineal tissue feel thickened and infiltrated. Four of Dr. Landau's patients were undoubtedly syphilitic, and the fifth also had probably suffered from syphilis. The author considers the ulceration to be syphilitic in character; but he only looks upon syphilis as the foundation on which the ulcerative process—the exact nature of which is unknown—develops itself. The prognosis, as regards life, is not unfavorable, unless the process extend to the bladder and the kidneys become implicated. But a perfect cure is never to be looked for, and complete cessation of the destructive process is very rare. Scraping, followed by the application of lactic acid, is the treatment recommended by the author. Anti-syphilitic remedies proved useless; but Dr. Landau thinks they might be of service at an earlier period, combined with the local application of lactic acid.—*London Medical Record*, Dec. 15, 1887.

LUPUS AND CUTANEOUS TUBERCULOSIS.—At the last meeting of the German Scientific and Medical Association PROFESSOR DOUTRELEFONT read a paper on this subject, in which he said that genuine cutaneous tuberculosis has been observed but very seldom, and so far as he knows never in a case of lupus. But he had recently observed and treated two such cases. The first case was that of a woman, 36 years old, who had suffered from "glands" since she was 20 years old. Two years ago a nodule formed on the upper lip, immediately under the septum mobile, and in a short time several similar efflorescences covered both cheeks. During this time the first nodule grew into a large ulcer, and later small ulcers appeared on the mucous membrane of both lips, nodules on the gums, and a large ulcer in the middle of the tongue. The patient had a cough that was periodical at first, but afterwards became constant. She was small, delicate, emaciated and anæmic. At the centre of the upper lip was a rather deep ulcer, about the size of a quarter dollar, and its edges were undermined, and the pale, reddish centre of which was covered with small, grey, nodule-like protuberances. There was a small amount of secretion, of a

sero-purulent nature. The edges and surroundings of the ulcer did not seem to be much inflamed, but they were very painful to touch. On the cheeks were numerous brownish red nodules, singly or in groups as large as a bean; they were soft and easily pressed in, and between them cicatricial tissue was seen. Two flat ulcers, with serrated edges, as large as a bean, were on the mucous membrane of the lower lip; their bottoms were almost flat, and on them could be seen grey miliary prominences. There was a similar ulcer on the upper lip. The gums were also affected, and on the tongue was a deep, crater-like ulcer. All the ulcers were painful to touch, and interfered with the patient's eating. Examination of the lungs showed dullness high up to the second rib on the left, where bronchial breathing and a slightly metallic rhoncus were heard. In the granulations of the ulcers and in the sputa many tubercle bacilli were found. The lupus on the face and the lingual ulcer were treated with a 10 per cent. pyrogallic acid salve, and sublimate bandages 1:1000. Galvanic cauterization was used several times a day on the ulcers of the mucous membrane of the lips, the gum nodules, and the lingual ulcer, and they were painted twice a day with a 1 per cent. sublimate solution. This treatment had a good effect on the lesions of the skin and mucous membrane, but the patient grew weaker and the pulmonary affection spread rapidly; diarrhoea set in, and pressure on the ileo-cæcal region became very painful. She was discharged from the hospital at the desire of her family. At that time the lupus of the cheeks was cicatrized, the ulcer on the upper lip was filled with good granulations, the ulcers on the mucous membrane were healed, and the large ulcer on the tongue was cicatrized, but meanwhile cavernous formation had begun on the left of the tip of the tongue.

In the second case tuberculosis of the subcutaneous connective tissue also existed to some degree, and distinctly on the chin; the patient had advanced tuberculosis of the lungs, and the sputum was full of tubercle bacilli. This form of skin-tuberculosis is almost always secondary, and seen in cases of advanced lung-tuberculosis around the mouth or the anus. Slight abrasions of the mucous membrane afford entrance to the bacilli, which produce the miliary nodules that eventually ulcerate.—*Deutsche medicinische Wochenschrift*, No. 43, 1887.

NEW METHOD OF REDUCING DISLOCATION OF THE SHOULDER.—DR. P. F. ABRIL inverts the usual procedure for reducing a dislocation downwards of the humerus, by fixing the bone and making the glenoid cavity descend on the humeral head. The patient is made to stand with a crutch in the axilla; the surgeon holds the hand of the affected side, and makes slight downward traction; the patient now lets his body down, as if he were going down on his knees, and by the pressure on the head of the humerus it is slipped into place. Abril claims that the method is simple, and easily and quickly done, not needing anæsthesia to produce muscular relaxation, and no assistance is required.—*El Genio Medico-Quirurgico*, Oct. 31, 1887.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JANUARY 21, 1888.

NITRITES IN ASTHMA.

A remedy that will give even temporary relief to so distressing a condition as that of asthma will be welcomed both by the sufferers from it and by the medical men. According to the observations of PROFESSOR FRASER, of Edinburgh, in the nitrites we have a remedy that will relieve the paroxysm almost instantaneously. He does not, however, claim that these drugs cure in the sense of giving immunity from fresh attacks. This is not the first time the nitrites have been used for this purpose, but the cases cited by Professor Fraser emphasize their good effects.

On reading the record of his cases one can but be surprised at the marvelous and almost instantaneous relief that his patients experienced. At first the nitrite of amyl was administered by inhalation. The patient to whom it was given was suffering intensely from the dyspnoea. Two minutes after she began to inhale the drug the cooing, whistling and creaking râles disappeared and respiration was greatly relieved, but all the trouble returned as rapidly as it had been mitigated. Repeated inhalations of the nitrate of amyl gave only the most flitting relief. It was soon found, however, that the same drug administered by the stomach gave relief as quickly but of a much more permanent character. For instance, 5 minims of amyl nitrite were given to a patient with intense dyspnoea whose chest was filled with loud cooing and wheezing râles so characteristic of the trouble. In thirty seconds the râles were diminished, and in one minute the patient declared the breathing very greatly relieved. In less than two minutes the breathing was easy and the râles were infrequent.

In half an hour he was anxious to sleep, and rested comfortably through the remainder of the night.

Similar trials with equally favorable results were made of ethyl nitrite, sodium nitrite and nitro-glycerine. In the cases described by Professor Fraser there was only one in which a second dose of the drug was needed. In this instance 1 grain of nitrite of soda was given. Two minutes after its administration the "wheezing was no longer audible, and the patient said he was 'quite easy.'" The time relation of inspiration to expiration before taking the medicine was as one to two and a quarter, and four minutes after as one to one. The patient remained comfortable for two and a half hours, and a little more than three hours after giving the first dose of the nitrite, as the breathing had again become difficult. $\frac{1}{2}$ grain of the same drug was administered with equally prompt good effect, and this time there was no relapse.

As regards the administration of the nitrites Professor Fraser seems to show preference for the sodium compound. Nitroglycerine he found was apt to produce headache, which did not accompany the administration of the sodium nitrite. The latter in one instance when administered in the dose of 5 grains showed slight toxic effects. Usually 1 to 3 grains were sufficient to give relief.

While we have dwelt thus upon the therapeutic value of Professor Fraser's experiments, for they seem to us the most important results of his work, we would do him injustice did we not call attention to his own conclusions from them. They were instituted with the hope of throwing light upon the mode of production of these dyspnoic attacks. Taking into consideration especially the two theories, the one of spasm of the bronchi, the other of active dilatation of the bronchial blood vessels and consequent stenosis of the bronchi, he reasoned that the nitrites as they dilate blood vessels would increase the dyspnoea if the second theory was correct but if the first was right would probably relieve it, acting upon the unstriated muscle fibres of the bronchi as they do on those of arterioles. He therefore urges that his observations confirm the belief that spasmodic asthma is the result of contraction of the muscles of the bronchial tubes. Certainly the bulk of evidence of all kinds points to the correctness of this view, but we must differ from Professor Fraser in estimating the value of his observations with reference to it. For as is well known and as he himself states, the nitrites cause relaxation of the blood vessels throughout the body, and lowers blood-pressure. Why then may they not, as it were, deplete the vessels that may be over-filled in any one

organ or tissue by withdrawing the blood into the general circulation? Indeed his own sphygmographic tracings show high arterial tension before administration of the nitrites which is at once greatly lowered but which returns with the return of dyspnoeic symptoms.

It would be an interesting experiment to try the effect of the nitrites upon a case of urticaria when very considerable active dilatation of blood vessels occurs through the action of the vaso-motors; a condition closely analogous to that claimed by many to exist in the bronchial tubes in asthma.

WANTED—A DEPARTMENT OF HEALTH.

The calling of a convention to meet in Washington on January 19 to discuss the subject of food adulteration is another reminder that this country has existed long enough without a Department of Health. It has been and is proposed by some to establish a Bureau of Adulterations, at an expense of not more than \$50,000 for the first year. By others it is proposed to turn the business of looking up and preventing food adulteration over to the Internal Revenue Department, in case the tobacco tax be repealed. We have a law respecting the adulteration of tea, and have official inspectors of tea under the Treasury Department. The amount of good work that is not done by these official inspectors is shown by the amount of adulterated tea that gains admission to the country every year, to be consumed or detected and thrown out by local boards of health. The proposition to place the Internal Revenue Department in charge of food adulterations in case of a repeal of the tobacco tax, presupposes something that is exceedingly improbable and for which there is no good reason, and assumes that men whose duty has heretofore been to see that all tobacco was properly taxed will be capable at once of taking hold of the enormous question of adulterations of food.

There is no good reason for suggesting that a special department of public health should be buried in a department of the Government that is entirely foreign to the whole matter, or for thinking that the public health of this country can be properly attended to by two or three scattered bureaus in dissimilar Departments of the Government. Few will deny that this country has as much need of a Department of Health as a Department of the Navy. Certainly there is a more pressing need of having some form of administration that will keep cholera, yellow fever and other diseases out of the country than of repelling hostile human invaders. Our Navy,

such as it is, is kept for possible future emergencies; we need a Public Health Department for pressing present necessities and dangers. The country has been and is too often placed in jeopardy by the carelessness of irresponsible State Boards of Health, ignorant commissioners and so-called experts. The inland States have repeatedly suffered from outbreaks of preventable diseases, on account of the gross carelessness of the health officers of the coast States; this would be obviated by a Government Health Department. The coast States and cities have been placed in peril by diseased food from the inland States; this could be obviated. When a manufacturer of impure food-stuffs is prevented from selling his adulterated articles in one State he can still sell them in States in which there is no stringent law or supervision; this could be obviated. As the matter now stands one State may quarantine or detain against cholera or yellow fever a sufficient length of time, while the health officers of the adjoining State make insufficient quarantine or detention, thus practically destroying the efficiency of the health regulations of the first State; this could be obviated by a Department of Public Health. One State has regulations in regard to the heating and lighting of railway cars, and their sanitary conditions, while three or four other States through which the same railway may pass utterly disregards such matters. The matter of vital statistics is alone large enough to require a special bureau, as is also the matter of construction, ventilation, and drainage of buildings.

There is no ground for fear that a Department of Public Health, once established in this country, will be long idle for the want of something to do.

CLARK GAPEN, until recently a well-known and highly esteemed citizen of Madison, Wis., made us a pleasant call yesterday, during which we learned that he had changed his residence to Chicago, and entered upon a new and important field of professional labor. Clark Gapen graduated in medicine in the Chicago Medical College in 1875, and after serving one year as interne of the Cook County Hospital, he became the resident physician at the Wisconsin State Hospital for the Insane near Madison, the duties of which he discharged with marked ability for three years, after which he pursued a successful general practice of medicine in Madison, and at the same time became Professor of Medical Jurisprudence in the University of Wisconsin, which position he still holds.

His interest in this department led him into a full study of the law and to graduation in the Law De-

partment of the University. And now, with a thorough knowledge of medicine rendered more complete by three years of direct care of the insane and nine years of general practice, he adds a full knowledge of the law, aided by ten years of active teaching of medical jurisprudence, he has taken his position as a member of the Chicago Bar, and is prepared to give special attention to those numerous and important cases, the adjudication of which involves medical testimony and the application of the rules of medico-legal investigation. With a thorough practical knowledge of both professions, and mental capacity of a high order, he will readily become one of the most useful and successful members of the legal profession.

CONDITION OF THE CROWN PRINCE.—A cablegram of January 15, says: "From high medical authority it is learned that there is now no reasonable question of the recovery of the Crown Prince." It seems that Dr. Howell, who is in constant attendance upon the Crown Prince at San Remo as the representative of Sir Morell Mackenzie, administered specific remedies with the idea that the affection was specific. It is asserted that the Crown Prince's condition began to improve almost immediately under this treatment, that the profession is now accepting Dr. Howell's diagnosis and treatment as correct, and that it is thought that the Crown Prince will probably be cured.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, December 14, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DRS. J. H. MUSSER, WILLIAM PEPPER, and THOS. G. MORTON, read papers on

THE MORBID ANATOMY, DIAGNOSIS, AND TREATMENT OF PERI-CÆCAL INFLAMMATION.

(See pp. 69, 72, and 75).

DR. W. W. KEEN said: I remember very well the first autopsy that I made in private practice, twenty-one years ago. It was on a patient that had died of typhlitis without operative treatment, and the question arose in my mind at that time, whether or not a surgical operation might not have relieved him. This was in 1866. In 1867, Willard Parker, of New York, practically systematized the operation. Since then, the sense of the profession in general has been more and more toward the operative treatment of these desperate cases.

I should like to say a word or two with reference to the diagnosis. I have seen many of these cases, and I have yet to see one in which a distinct tumor was present. As a rule, tumefaction will be found, but no tumor. Nor is any fluctuation found in these cases. In a case which I saw in consultation eight years ago, there had been extensive infiltration in the right iliac fossa, for three weeks; but there was absolutely no tumor and no fluctuation; yet, when the cavity was opened, a pint of pus was found. We should make up our minds positively, in reference to the surgical treatment of these cases, that we are not to wait for the formation of a distinct tumor or the presence of distinct fluctuation.

Another symptom, to which Dr. Pepper alluded, I have not found a constant one—and it is surprising that it is not—that is the flexing of the right thigh. Not only may this be so, but all the other symptoms may be fading, and yet pus be present. In the *Medical and Surgical Reporter* for the early part of 1886, I reported a case in which I operated on the sixth day. The symptoms had followed the ingestion of a large quantity of grapes, the temperature reaching 102.8°. The fever and pain had nearly disappeared, and the other symptoms had ameliorated to such an extent that convalescence seemed almost established. Here the diagnosis and treatment hinged upon one measure, which I was rather surprised to hear Dr. Morton condemn—that is the use of the aspirator. He, however, did not speak of the hypodermic syringe, and I do not know whether or not he includes that in his condemnation. In these, and certain other cases, I think the use of the syringe for exploratory purposes is strongly to be commended. I grant that it is not always safe to use the smallest of the needles of the aspirator; but to the use of the hypodermic syringe I see no objection whatever. If it penetrates any normal structure, it will do no harm; and if it reaches pus, it gives a positive indication for operation.

The time at which pus forms is often extremely early. I have had two cases in which on the sixth day a large quantity of pus was found. Both of these cases made excellent recoveries. In the case seen with Dr. Pepper, pus was found as early as the close of the third day.

I was glad to hear Dr. Pepper refer so strongly to the importance of the rectal examination in these cases. Others have alluded to this, but the urgent importance of it has never before been seriously dwelt upon. Dr. Musser has shown that the appendix often lies directly on the brim of the pelvis. If the perforation be near the cæcum, the pus will find its easiest outlet, in not a few cases, toward the cavity of the pelvis. It is, therefore, in the majority of cases, within easy reach of the finger; and, in an urgent case, if it cannot be reached by the finger, the introduction of the hand, provided it be a reasonably small one, may be practiced.

Both Dr. Pepper and Dr. Morton have alluded to operation in these cases. As is well known the operation of Dr. Willard Parker consists of an incision not vertical, but parallel, to Poupart's ligament. This incision will do very well in the majority of cases,

where the lesion is situated in the right iliac fossa proper. Either this or the vertical incision to which Dr. Morton alluded, may be selected. As we go further and I do not find pus, the hypodermic syringe may be used for purposes of further exploration. In the second class of cases alluded to by Dr. Pepper, where there is perforation of the appendix, where there is absence of induration in the right iliac fossa and especially if there is a general peritonitis, I should certainly favor median and not lateral laparotomy. The latter does not give so simple and bloodless an operation; nor does it give us so easy access to the cavity of the pelvis for exploration, for drainage, and for the surgical manipulations that may be necessary. In the case I operated on one year ago, for Dr. Pepper, I regret that I did not do a median operation at once, instead of doing the lateral operation. The median operation will give us every facility for operation on the viscera in the right iliac fossa, and especially will it give us access to the appendix. Unless the indications for lateral operation be strong, I should favor the median-incision.

I should hesitate to perform puncture of the rectum. It would be far better to do a laparotomy, rather than in the dark, not knowing what the lesion was, simply to drain the cavity of the pelvis, as we would do by rectal puncture. We want to know what condition exists; we want to find out the exact facts. Exploratory operation is not only constantly done, but done, I may almost say, without any additional risk to the patient, and it gives us the means of dealing with whatever lesion we may find. If the appendix is perforated, we should ligate it and remove the diseased portion. If the cæcum should prove to be the seat of perforation, we should close the opening with the Lembert suture. If the perforation, is too large for this, it will be necessary to follow the plan suggested by Dr. Morton, and make an artificial anus.

DR. W. HUNT said: The suggestion has been made that treatment with salines should take the place of the opium treatment in these cases, especially after operation. This is a point on which more experience is needed before we can reach a decision. When we take into consideration the fact that several cases of perforation of the appendix have been known to get well under the opium treatment, as proved by post-mortems long after, and also the fact that the mortality after the adoption of that treatment years ago, fell to a large extent, we should not hastily abandon it. It is no wonder I feel kindly toward it, for I am told that I am indebted to the opium treatment for my recovery from an analogous lesion—*i. e.*, perforation of a typhoid fever ulcer.

A word with reference to the operation of ligating and cutting off the appendix. It seems to me that by this method it might possibly be found that only mucous surfaces had been brought into contact and adhesion not secured. It would be better after removing the diseased portion to close the stump by the Lembert suture.

DR. WM. OSLER said: I should like to make one or two remarks bearing upon the anatomy of this region. There can be little or no doubt that the cæcum

—namely, that portion of the large intestine below the orifice of the ileum—is, in 95 per cent. of all cases, absolutely free. In the one hundred cases analyzed by Treves, there was not one meso-cæcum. If he had examined five or six hundred cases, he might have found two or three. I have the records of many instances in which the cæcum occupied the classical position and was surrounded by peritoneum only on the front and sides; and last week in two cases in succession a well developed meso-cæcum was present.

It is remarkable how large a number of cases of appendix disease recover. I have carefully gone over my notes, and I find six cases of obliteration of the appendix. There had been peri-cæcal inflammation with subsequent obliteration. I find a record of eleven cases of ulceration, seven in phthisis and four in typhoid fever. I have never met with foreign bodies in the appendix, but I have on two occasions had foreign bodies brought to me that had been found in subjects in the dissecting room.

The important point in connection with perforative appendicitis, is that in the majority of cases the perforation occurs first with slight inflammation in the neighborhood, perhaps lasting a few weeks or months, without exciting any special symptoms; and the first symptoms to which the attention of the physician is called, and which are rapidly followed by peritonitis, are those of perforation not of the appendix, but of the appendiceal abscess. In five instances of peri-cæcal abscess which I have examined, in every one of them there was evidence that the abscess had lasted some time. That this is the case is evident from the fact that there are many instances—of which I have had three—in which there was no perforation into the peritoneum, and no peritonitis occurred, yet there were signs of septic fever. The perforation had led not to general peritonitis, but to inflammation of the portal branches and diffuse abscess of the liver. This is a point which, I think, has not been sufficiently recognized in dealing with these cases of perforation of the appendix.

With regard to cæcal disease, we have all seen the cases which have been described by Dr. Pepper. I think that they result, in the majority of instances, from impaction; and that the induration which we feel is in most cases fecal is, I think, evident. As Dr. Pepper has said, it is important to distinguish between these cases and appendicitis, for the majority recover. We, however, learn from post-mortem examinations that a considerable number of cases of perforation of the appendix also get well—cases, too, in which there have been no special symptoms.

I have had three cases of peri-cæcal abscess from disease of the cæcum. Two were cases of round ulcer of the cæcum. In both the cæcum was the only part involved, the ulcer not being larger than a quarter of a dollar. In both instances the perforation was posterior and had excited suppuration in the tissues as high as the kidney. In one instance the abscess had been opened in the loin and had discharged very freely. In the third case the perfora-

tion was due to cancerous ulceration. There was in this case a large perforation just beyond the orifice of the ilium.

DR. J. C. WILSON said: I should like to indicate a division of the subject which I have not thus far heard mentioned. Dr. Pepper has alluded to the form of inflammation which is so common, and which is probably due to fecal impaction. A large proportion of these cases recover, and the anatomical condition present must remain, to a large extent, in doubt. I am disposed to regard it as a local enteritis involving the cæcum, and, perhaps, the appendix. I believe the fulness that is present is due in part to fecal impaction, and in part to plastic exudation around the bowel.

In the second place, we have those cases in which there is the formation of peri-cæcal abscess more or less limited in extent, and in course of time this will require surgical interference.

The third group of cases is that in which there is more or less extensive and general peritonitis, and this peritonitis may be due, as Dr. Osler has pointed out, either to rupture of a peri-cæcal abscess or to primary rupture of the appendix, with the escape of its contents into the peritoneal cavity. I believe that in this form we have to deal with two essentially different processes. In the first place, we have those cases in which we have rapidly developing peritonitis as the result of the escape of the contents of the appendix, or of a peri-cæcal abscess, and these cases demand the surgical interference which has been indicated to-night. I believe that there is another class of these cases in which the peritoneal process results, not in purulent exudation finding its way down into the pelvis, but in plastic exudation from the beginning. Here we have the typical symptoms of general peritonitis without the formation of pus. These cases, I am led to believe from my own experience, not only terminate in recovery, but do better without than with surgical interference.

DR. J. S. NEFF said: The early period at which pus formation takes place in these cases has been referred to. I would only mention a case which illustrates the rapidity with which general peritonitis may appear. I made a post-mortem on a child which was struck with a stone, causing rupture of the bowel. Death occurred seven or eight hours after the accident, not from shock, but from general peritoneal inflammation.

DR. E. MONTGOMERY said: I have met with a number of cases of these affections. It is certainly difficult to decide what should be our plan of treatment. We save cases in which this trouble exists, and goes on to local peritonitis, and under proper treatment recovery occurs. We have other apparently similar cases, which end fatally under the same treatment. Three cases have come under my observation. One was a man some 20 years of age, who complained of severe pain in the right iliac inguinal region, with considerable tympanites, and with symptoms of peritonitis. Leeches, followed by hot poultices, were applied, and morphia administered hypodermically. By the seventh day the acute symptoms began to subside. On the morning of the

eight day he had a severe lancinating pain in the side, with collapse, followed by death a few hours subsequently. The post-mortem revealed gangrene of the end of the appendix. This had been circumscribed by plastic exudation. At the time that the lancinating pain had occurred, an artery had been opened, and hæmorrhage had occurred, which broke through the exudation, and a pint of blood was found in the peritoneal cavity.

The second case I saw in consultation thirty-six hours before the death of the patient, who was a man 50 years of age. There were marked signs of peritonitis, with great distension of the abdomen, greatly interfering with the breathing. It was not deemed advisable to operate. As there were constant efforts at vomiting, I introduced the stomach tube. This was followed by the regurgitation of half a pint of black material. This gave considerable relief from the distress, and the abdomen was much reduced in size. On examination, perforation of the appendix was found.

The third case was one of those reported to-night, in which operation was performed.

I have now under treatment a patient 17 years of age, who, during the last six months, has had eight or ten attacks of tenderness in the right inguinal region. Although he has been in bed for the past three weeks on a restricted diet, he is now suffering from another recurrence of the symptoms. It is a question whether or not in this case it would not be better to do a laparotomy for the purpose of removing the appendix when the inflammation subsides.

DR. E. T. BRUEN said: The treatment of peritoneal inflammation by salines is receiving considerable attention at the present time. From what has been said to-night, it would seem clear that in the treatment of typhlitis the important measures are those which secure rest, including the use of opium and the avoidance of all violence; and when the inflammation has subsided, the removal of the impaction by such mild laxatives as calomel; and, besides this, the treatment of the catarrhal condition by appropriate measures.

In those cases where there has been rupture of the appendix, with the occurrence of peritonitis, it seems improbable that the administration of repeated doses of salines would be likely to do much good. I think that the expression of medical opinion as to the measures to be employed under these circumstances should be clear.

DR. J. H. PACKARD said: I would briefly refer to one or two of a number of cases illustrating the subject of this evening's discussion, which have fallen under my observation.

The first occurred in the practice of the late Dr. I. F. Meigs, in 1860, and is reported in detail in the *American Journal of the American Sciences* for 1861. At the autopsy, made by me, an intestinal concretion had been lodged in the appendix vermiformis, and had caused a circular band of ulceration, at one point of which perforation had taken place. There was a collection of pus about the appendix, and universal suppurative peritonitis, with flakes of lymph on the coils of intestine.

Another case, which occurred in 1879, in my wards at the Episcopal Hospital, may illustrate the difficulty of diagnosis sometimes met with in these cases before the recent advances in the surgery of this region had been made. A boy, about 17 years of age, who had worked on a farm, was admitted on account of lameness, ascribed by him to ulceration of his right heel by a heavy and ill fitting shoe. There was a swelling in the upper part of the thigh, which was regarded as a sympathetic bubo. At the lower part of the abdomen there was also some fulness and tenderness, which should have attracted more attention than it did, and which ought to have suggested the true nature of the case. Several openings occurred below Poupart's ligament; the discharge was very abundant and soon became faecal in character. A little later, fluctuation was noted above the ligament. Parker's operation was performed, and a small angular piece of beefbone was found that had worked its way out of the bowel. A more radical procedure, such as would now be resorted to, might have saved the life of this patient, who died exhausted.

As to the employment of the hypodermic syringe for diagnostic purposes, it seems to me that if fluctuation is clear enough to warrant this, its aid is scarcely needed. It must not be forgotten that there are on record several cases in which fatal faecal extravasation has followed the puncture by this means of a herniated bowel.

With regard to the choice between the lateral and median incisions, I think that where the trouble is clearly in the right side of the abdomen, this is the proper surgical entrance. If there is no necessity for opening the peritoneum, it is certainly sufficient. And if there is such necessity, a lateral incision eight inches in length, such as is recommended for other purposes by several surgical writers, will give abundant access.

I would suggest that in women a vaginal examination may enable us to explore the iliac lesions as well as the ovaries and tubes.

DR. W. W. KEEN said: I do not wish to be understood as advocating indiscriminate laparotomy in cases of peri-caecal inflammation. I attempted to draw a distinction between those cases in which the pus is evidently in the iliac fossa, where the lateral incision is the proper one, and those cases in which examination by the rectum, and the vagina in women, shows that the pus has not been limited to the iliac fossa, but is in the cavity of the pelvis, where a median laparotomy is the better operation.

DR. C. WIRGMAN said: I rise merely to emphasize one symptom mentioned by Dr. Pepper, and that is, the extension of the pain into the genitals. I had one case in which the pain radiated down the inner and outer aspects of the right thigh. In that case, which terminated fatally, the autopsy showed a concretion, but no foreign body. I had cautioned the utmost quiet. The patient was, however, a restless child, and on the eighth day flung himself from one side of the bed to the other. This was at once followed by excruciating pain, for which it was necessary to administer ether.

DR. MUSSER said: I have but a word to say in conclusion. I do not deny that typhlitis occurs, I wished simply to emphasize the relative importance of appendicitis as compared with typhlitis. Typhlitis may occur just as inflammation in other parts of the colon may.

I am glad that Dr. Osler referred to the relations of the peri-caecal abscess to the peritoneum. In my hurried remarks, I neglected to mention it. It must be borne in mind that the danger of a peri-caecal abscess depends entirely upon its relation to the peritoneum. When intimately connected with it, or rupturing into the peritoneal cavity, the danger becomes imminent.

INTERNATIONAL CONGRESS ON INEBRIETY.

Held in London, England, July 5 and 6, 1887.

The Congress opened on Tuesday afternoon, July 5, with a reception to Dr. T. D. Crothers, of Hartford, Conn., and other Americans who were present. A large number of medical men were present, and after a service of tea and coffee the President, DR. NORMAN KERR, took the chair. In a welcome address he said that to America we were indebted for the modern movement on behalf of special legislation for the inebriate. From the illustrious Dr. Benjamin Rush, one hundred years ago, to the present day, American physicians had laid the foundation of a great work of permanent reformation and cure. Besides the incalculable services of the United States in the rise and progress of the general temperance reform, and in the practical application of enlightened and effective prohibitory legislation, the recognition of the diseased state of many drunkards, and the consequent necessity for remedial treatment as in the case of other diseased conditions, had been first fully and persistently pressed in the United States. In that great and friendly community across the Atlantic special institutions had first been established for the cure of the disease of inebriety. The results had been excellent, and such as filled all their hearts with joy and thankfulness. In England we were far behind the United States in this practical and useful work. There, the inebriate, willing to surrender his liberty, was deterred by no forbidding appearance before two justices from applying for admission to a Home for Inebriates. The applicant could be received at once, and detained for the period for which he contracted with the managers by simply signing an agreement. There, too, the long-suffering and harassed friends of the inebriate could, on proving his inebriety, have him compulsorily, if necessary, sent to a retreat for a time for care and treatment. Dr. Kerr had seen in America the most satisfactory issue from such commitments. Provision, too, was made for the poor. Here we had no legislative pity on the destitute drunkard or on his sorely tried wife and family. But the future was not without hope even in Britain. A better day was dawning, an auspicious prospect for which we were mainly indebted to such pioneers as Dr. Parrish, Dr. T. L. Wright,

and Dr. Crothers, who honored the Society with their presence that day.

He concluded by offering a resolution of welcome, which was responded to by DR. CROTHERS, in a review of

THE STUDY OF INEBRIETY AND INEBRIATE HOSPITALS IN AMERICA.

He described the origin of the study of inebriety from the physical point of view; the hospitals for inebriates to-day; the inmates of hospitals and the cures; legal control of inebriates; the organization of State and private asylums for inebriates; the literature of inebriety and its peculiar character in America; and some general conclusions from this.

DR. JOSEPH PARRISH, of Burlington, N. J., addressed the Congress on the inquiry

IS THERE A CLIMACTERIC PERIOD IN INEBRIETY?

The author said that the climacteric cause of puberty and the menopause were well known. In many inebriates there were periodicities, often referred to the gastric region, dependent on the condition of that part of the brain which presides over digestion. Might not this periodic state exhaust itself at the time of life when vital force began to wane? From 500 cases, he had come to these conclusions: that the majority were at the onset of the disease the subjects either of disease or accident, and had a tendency to periodical outbreaks; others had a deficient resisting power. At what time did the morbid state antecedent to inebriety tend to exhaust itself? When the vital energy failed in intensity with the approach of age and altered conditions—between 45 and 50 years of age, sometimes sooner. Besides direct alcoholic heredity, the union of incompatible elements in parents engendered in the offspring an unstable temperament.

DR. T. L. WRIGHT, of Bellefontaine, Ohio, read a paper on

THE EFFECTS OF ALCOHOL ON THE BODY AND MIND.

He described at some length the two great classes of moral degeneracy from alcohol: that arising in consequence of hyperplasia of the interstitial tissue in the brain, and that induced by long continued anæsthesia. The symptoms in the progenitor, while presenting the characteristics of debased morality, may be attended also by some indications of insanity; while in the descendant the heredity is manifested by moral degeneracy only, and a consequent criminal proclivity, without symptoms of intellectual insanity.

The opening Address by the President, DR. NORMAN KERR, was delivered at Westminster Town Hall, on Wednesday morning. His topic was

INEBRIETY, AND ITS MEDICAL, MORAL AND LEGISLATIVE TREATMENT.

He said that inebriety was a disease of the nervous system allied to insanity, and characterized by an almost overpowering impulse to, or craving for, the oblivion of narcotism—a true intoxication mania, or, as he preferred to call it, narcomania. The disease assumed varied forms. It might be periodic or con-

stant, social or solitary. The form might be determined by complicating disease or correspond to the inebriant used. In alcohol mania, as well as spirituous there was wine and beer inebriety, though many who declared that ardent spirits were poisonous taught that wine and beer were innocuous, an extraordinary and perilous error, for nearly 10 per cent. of the cases treated at the Dalrymple Home had been beer or wine narcomania. Causes were predisposing and exciting. An exciting cause provoked the inebriate paroxysm in a constitution predisposed to inebriety, while the same excitant had no effect in stimulating a person who had not this predisposition to excessive narcotic indulgence. Among the predisposing causes, the chief was hereditary, which was at times crossed, *i. e.*, the male children only of an inebriate mother labored under it, or the female children of an inebriate father. Of exciting causes, some kind of nerve shock was the chief. Inebriety had recently spread considerably among children, little ones of even 3 and 4 years, on recovering consciousness after insensibility from an accident asking imperatively for gin and other liquors. The importance of a knowledge of the causation of inebriety lay in the basis this offered for sound treatment. Quacks and philanthropists had sought for and had proclaimed that they found magic potions to charm away inebriety. All these nostrums had been found useless. Others had put forward vegetarianism as a cure, but its pretensions were also unfounded. There was no royal road to temperance. There were certain conditions of sound treatment. The first was the unconditional withdrawal of the poison, which must be immediate with alcohol, chloral, ether, and chloroform, but should generally be gradual with opium and morphia. The second and third conditions were the removal, if possible, of the exciting cause, and the reparation of the physical damage wrought by inebriety, the remedying of the pre-inebriate morbid condition, and the strengthening of the moral control. The results of the treatment at the Dalrymple Home had been most satisfactory, more than one-half of the cases having been restored to their friends and to society. The experience of other genuine homes had been somewhat similar. One-third of the male cases might fairly be considered cured, the result not being quite so favorable in the case of females. After a reference to the unfavorable legislation which existed in other countries with regard to this matter, the President concluded by declaring that they might hopefully look forward to a future time, whether they lived to see it or not, when the truth would be acknowledged by the Church and by the State, and full justice would be done to the physical infirmities of the weakest and poorest of inebriates.

DR. CAMERON, M.P., took the chair and addressed the Congress on

THE FORMER TREATMENT OF INEBRIETY,

saying that as lunatics used to be treated like wild beasts, so till recently habitual drunkards were regarded but as a nuisance to be got rid of by drinking themselves to death. Only of recent years had it

been seen that inebriety was often as much a disease as lead poisoning or the gout, and as susceptible of control and cure.

DR. DE COLLEVILLE, of Paris, France, read a paper on the

CONTINENTAL LEGISLATION FOR INEBRIATES,

saying that in Austria, Belgium, France, Germany, Greece, Holland, Italy and Switzerland, drunkenness was not in itself an offense, but public and disorderly drunkenness was punished by short imprisonment and fines. In some countries the fines were increased by the number of convictions. In some places bankrupts and paupers as well as interdicted persons, for prodigality, were not allowed to enter a drink establishment for thirteen months or more, as at Lucerne and in Galicia, except for food in necessity. Drunkenness was spreading beyond the northern Continental regions, and Italy and Greece were becoming infected. He concluded with a hope that the physical state of inebriety should be recognized. Then all would have more common ground to begin on.

LORD DENMAN, of the House of Lords, addressed the Congress and said that he had taken a great deal of interest in temperance, but not total abstinence. When the rights of minorities came to the fore those who had advocated these principles year after year would have some respect shown to their efforts. He was satisfied that the disease of inebriety must be recognized, and physicians must teach us the real remedies. He would have the laws enforced stringently, and hoped a new era of the subject was close at hand.

THE REV. J. W. HORSLEY, late Chaplain of Her Majesty's Prison, Clerkenwell, read an interesting paper detailing his observations on

INEBRIETY AMONG PRISONERS.

He said that as there had been 20,000 admissions annually to Clerkenwell Prison, inebriety was constantly before him. In ordinary prisons at least half the inmates would be in prison directly through drink, and another fourth indirectly. In Clerkenwell many who were on remand or awaiting trial had not had time to get sober when he saw them, and were entering upon a recovery from delirium tremens. Many were plainly dipsomaniacs, and then suffering from the circumstantial or periodic drink crave. His estimate of 75 per cent. of crime directly and indirectly due to inebriety was confirmed or exceeded by other gaol chaplains or governors, by magistrates, and police superintendents. At one court he had found in one week 124 charges for drunkenness out of 154. Prison officials had clear proof of the popular fallacy that drunkards "must be let down by degrees." Thousands of cases every year proved that even in old-standing cases sudden abstinence was quite safe. A clever doctor whom he ministered to for three months, before hanging, said the imprisonment was a blessing, for he could not or would not cure himself of the morphia habit, and now through prison he was a free man. All prison doctors, when asked what evil they had seen arise from the sudden disuse of alcohol, replied "none."

MR. CLARK BELL, President of the Medico Legal Society of New York, read a paper on

THE RELATION OF INTEMPERANCE TO INSANITY.

In the course of his remarks he said that they might safely assume that science recognized throughout the world the abuse of alcohol, not only as the greatest and most direful cause of insanity known to the race, but that it recognized alcoholism in its various forms as a distinct type of insanity. The mission of the English Society for the Study of Inebriety was of the highest importance. If by their labors they could benefit the future humanity by a better understanding of the causes which had led, and were tending to the degeneracy of mankind, if with such knowledge, they could arrest or lessen the ills of inebriety, they would have accomplished a great good.

SURGEON-MAJOR R. PRINGLE, of the Bengal Army, in his paper on

HOMICIDAL AND SUICIDAL INEBRIETY,

observed that careful study of the disease in all its diseased conditions was essential to the devising of thorough and intelligent legislation now that heredity and environment were bearing their harvest. Suicide and homicide, the result of alcoholic stimulation, were often but manifestations of a diseased cerebral condition which might be dormant through life; or, if lighted up by alcoholic stimulation, might exhibit themselves in murder or self destruction, or the angry blow of the partially inebriate. In confirming one of the sentences of death in India, Sir Lepel Griffin lamented the absence of a medical history of the accused, attaching no importance to alleged spiritual delusions. This is the true ground. These cases were cases of physical disease, and ought to be treated as such. It is high time that some legal protection should be granted to the public in these diseased and easily provoked cases of inebriate, homicidal, and suicidal mania. This victim paid for his crime with his life, but the true cause remained unchecked and unnoticed.

THE PRESIDENT read a paper on

COLONIAL LEGISLATION FOR HABITUAL DRUNKARDS.

He briefly reviewed the provisions existing in the colonies for inebriates. It was only fair to say, he remarked, that there was as yet very limited accommodations in special homes for inebriates in the colonies, a practical haven of refuge and a means of restoration to health for the narcomaniac, which was much more abundant here. We had a number of such homes for the well-to-do, though none licensed under our Act for the poor. It was high time that the Legislature of the United Kingdom should take a lesson from her vigorous colonial offspring by caring for the destitute as well as for the rich diseased drunkard, by offering an opportunity for the treatment of every inebriate willing to give up his freedom for a time, and by investing the proper authorities with power to compulsorily seclude the victim to narcotics for the threefold purpose of effecting his cure, of saving his wife and family from a life of inexpressible sadness, and of protecting the community from the violence and riot of a morbid maniac.

AFTERNOON SESSION.

DR. B. WARD RICHARDSON explained the

ACTION OF THE HEART AND CIRCULATION IN THE
INEBRIATE CLASSES,

by sphygmographic tracings, which demonstrated that there was a deviation from health in every stage of inebriety. In the inebriate the heart was never allowed to declare itself naturally. The pulse readings showed continuous irregularity of the circulation. When the changes became permanent they produced the disease they called inebriety, the centre of which was in the heart and circulation. In treatment time and total abstinence were essential. Not only must the alcohol be thrown out of the system, but it must be kept out till the perverted body came back to its natural state. A clear definition of the physical nature of the evil was essential.

DR. PETITHAN, of Liège, read a paper on

LEGISLATION FOR INEBRIETY.

Alcoholism in Belgium has augmented with frightful rapidity, and calls for immediate action. England and the Netherlands, these two classic countries of progress and liberty, and France had adopted repressive measures. Belgium ought not to lag behind. At present the alcoholized man, unless in extreme insanity or violence, is not dealt with. He is not responsible, being under the power of alcohol, and yet has the control of his family, the administration of his affairs, and he is a jurymen. He cannot be interdicted unless he is mad, yet he has lost his will, is no longer free, and no more responsible. This newly discovered disease—inebriety—ought to be recognized by the law. The inebriate should be liable to interdiction, not only by his family, but by a public officer. This can be done now only in the event of fury or imbecility; but it can be done in a lucid interval. The alcoholized man, when his diseased state is medically and legally recognized, ought to be interdicted. When he is interdicted there ought to be power to shut him up in a special home, where he should be treated, and obliged to work according to his strength.

DR. AXEL DICKSON, of Sweden, read a paper on
ASYLUMS FOR INEBRIATES IN SWEDEN.

In Sweden there are two such asylums. One is at Bic under medical superintendence, where the charges can be afforded by only the economically independent. The other is for working people, at Törnås, the charges varying from £11 to £22 per annum. The patients have to work on the farm, in the dairy stables, and elsewhere on the premises. One year's residence is required. No intoxicants are allowed. The farm has been open for only six months. Already there have been seven patients, some of whom are hopeful cases.

PROFESSOR BINZ, of Bonn, read a paper on
GERMAN LAW ON INEBRIETY.

He stated that, by the German Penal Code, whoever surrenders himself to drinking so as to fall into a condition in which, through the interposition of the court, foreign help must be resorted to for his sup-

port or the support of those whom he is in duty bound to maintain, is punished with imprisonment. On a repetition of the offense, imprisonment can be arranged in a workhouse for a longer time. The closing hours of drink places are usually 10 o'clock P.M. in the country and 11 P.M. in towns.

DR. MOELLER read a paper on

INEBRIETY IN BELGIUM.

He traced the history of the movement for legislation for inebriates in Belgium, particularizing the labors of Drs. Petéthan, Barella, Carpentier, Jansen, and others. Dr. Carpentier had found 90 per cent. of his post-mortems on males and 10 per cent. of his post-mortems on females at the Brussels Hospital show signs of incurable organic alcoholic disease. The ages at which these inebriates had begun to drink ranged from 55 years to 8 years. In Belgium they were agitating, 1, for interdiction of the inebriate; 2, for seclusion of the inebriate in a special asylum for treatment of his disease. Dr. Moeller was in favor of the Government opening such establishments, rather than their institution by private individuals. Inebriety was a true disease, and required not only medical treatment, but also legislative care and control.

DR. LEWIS D. MASON, of New York, read a paper on

THE RELATION OF DISEASE TO ALCOHOLIC INEBRIETY.

Disease might act as the predisposing, exciting, or complicating and protracting cause of alcoholic inebriety. The disease might be inherited or acquired. Of several hundred cases under his observation, over one-third had either insane or inebriate parents, the latter being in excess. In addition, all neurotic tendencies were predisposing, all hereditary diseases accompanied by degenerative changes, congenital syphilis, tuberculosis, epilepsy, or other neuroses. These were born with a defective nervous system, and had a low resisting power to disease which tended to still further degenerate their nervous system. Such were congenital neurotics, with a natural tendency to stimulating and narcotic drugs, readily becoming insane, or inebriates, or opium *habités*, on the presentation of an exciting cause.

Having pointed out the relation of disease or injury as predisposing or exciting to inebriety, let us now see how alcohol excites disease. Alcohol is no respecter of tissue, though it is more deadly in effect on some structures than on others. It is especially injurious to the cerebro-spinal centres. It acts on the cerebral vessels, as seen in vaso-motor paralysis, in fatty degeneration of the capillaries, and leakage of the watery constituents of the blood, constituting serious apoplexy, a not uncommon fatal termination in inebriety. Epilepsy is a neurosis due to alcohol. About one in fourteen, in several hundred cases, were due to alcohol as the exciting cause. Then there are various forms of acute and chronic alcohol mania, *mania a-potu*, delirium tremens, chronic alcohol mania, and chronic alcoholism. There are also general paresis, hemiplegia, and the multiple forms of neuritis. Alcohol causes gastric derangement, dyspepsia, atony and degeneration of the mucous

coat and glandular structure of the stomach, a condition often secondary to hepatic derangement. Phthisis is also produced by alcohol.

CHEVALIER MAX PROSKOWETZ DE PROSKOW-MARSTORFF read a paper on

INEBRIETY IN AUSTRIA.

The author stated that in Austria inebriety was increasing everywhere on a dangerous scale. The consumption of alcohol (taken as at 100 per cent.) was 6.7 litres a head in a population of 39,000,000; but in some districts 15.5 litres was the average (4.5 litres go to a gallon). In all Austro-Hungary there was an increase of nearly 4,000,000 florins in the cost for alcohol in 1884-85 over 1883-84. In 1885 there were 195,665 different places (stations, gin-shops, and subordinate retailers) where liquors were sold. Dr. Julius Wolff had shown that the proportion of liquor stations to the inhabitants varied from 1 for every 173 to 1 for 1,181. In districts where the most spirits were used there were fewer fit recruits. Of 2,742 murders and homicides in Austria in 1876-80, 978 were by drunken persons; in Bohemia, 103 out of 435; and in Moravia, 74 out of 242. Austrian inebriety was increasing in country and in towns. 33.41 per cent. of the insane in the Vienna Asylum were from alcoholism, or seven times more than ten years ago. Alcoholism and inebriety had spread more rapidly since spirits had been made from molasses, potatoes, sweet turnip, Indian corn, etc. Inebriety was also causing graver diseases. The Austrian Inebriety Society has asked the Parliament to establish homes for inebriates. By the Austrian Penal Code (1852) accidental intoxication exempted from criminal responsibility; but it was an aggravation if the person knew from experience that he was very emotional when intoxicated. Inveterate drunkenness was a misdemeanor in craftsmen working on roofs or with materials easily inflammable. Austrian workmen generally take spirits at breakfast. Introducers of spirits into factories were severely punished. In the Tyrol, C. Payer says that two-thirds of the people are inebriates, including women. At the request of the Inebriety Society, the common Imperial Minister of War had requested commanders of troops and garrisons to ensure the sale by sutlers of tea and coffee at low prices. The author had asked Parliament to teach the intoxicating nature of alcohol in schools. The Austrian Inebriety Society was founded on January 17, 1884, and had done good work by collecting statistics, publishing pamphlets and proceedings, chemically examining spirits, and promoting tea-cars and coffee-runs.

DR. EDWARD C. MANN, of Brooklyn, N. Y., read a paper on

THE PATHOLOGY OF INEBRIETY.

He said: Let the profession regard inebriety in its true light as a physical disease amenable to treatment, and aim to instruct the communities in which they practice medicine as to the physiological action of alcohol on the functions of the human body, and the science of preventive or State medicine will owe an incalculable debt of gratitude to them for disease and death prevented, and much domestic misery averted.

Inebriety is a disease caused by heredity, by defective nutrition, by emotional shock, by physiological crisis, by visceral diseases, and by structural changes in the brain. We may have anaemia of the brain in inebriety, with the blood in the capillaries deficient in quantity and defective in quality; we may have secondary atrophy of the brain; we may have hyperaemia of the brain, with increase of quantity of blood in the capillaries, with symptoms of either excitement or depression. We may have oedema of the brain, with infiltration of it and of the pia mater with serum, especially when the case of inebriety is associated with Bright's disease. The cerebral substance itself is not infiltrated. In these cases we see a slow diminution of mental power and motor force. We may have softening of the brain from vascular obstruction, depending on vascular degeneration, causing thrombosis, or valvular disease of the heart causing embolism. The former in inebriates is the usual form, and it is associated with chronic alcoholism and Bright's disease. There are generally the premonitory symptoms of mental deterioration: numbness, pains in the limbs and pains in the head, in the brain-softening of inebriates. Subsequently we see mental dulness, defective perception, drowsiness, loss of memory, slight delirium, emotional attacks, headache, articulation and handwriting bad, the delicate motor acts badly performed, and less of physical power. Dementia may end the scene.

Finally, I would speak of the great importance of the recognition of the mental condition that in inebriates is the precursor of actual insanity. I have had the opportunity of studying carefully several such cases, many of whom I have been so fortunate as to restore to home and society. The clinical manifestations which I have observed in these cases have been depression, unwonted excitability, disregard of the minor proprieties of life, a change coming over the warmest affections, quick changes and rapid transitions in the current of the feelings, sleeplessness and a complete change of character and habit; the person meanwhile entertaining no delusions, but occasionally losing his self-control, the general acts and manner at such times being strongly expressive of the inward emotion. There are intervals of perfect calmness and self control, during which the person clearly discerns his true relation to others, and even, perhaps, recognizes the influence which the incipient disease exercises over his feelings and actions. In those cases where insanity appears, we see the utter downfall of the intellect manifested by the fury of mania, or the moodiness, suspicion, depression, and impulse towards self destruction of melancholia. All these are the successive links forged in the chain of the insanity of the inebriate, the study of which is full of interest, not alone to the student of mental pathology, but to everyone who desires to lead the wandering mind out of the darkness and mazes of disease back into the light of reason.

DR. ALFRED CARPENTER read a paper on

THE VICE AND DISEASE OF THE INEBRIATE.

Inebriety in its confirmed state is a disease. By

becoming oinomania or delirium tremens it is a departure from health. The diseased state of brain-cell is manifest. Inebriety spreads by the contagion of irritation, like St. Vitus's dance, the dancing mania, and other nervous affections. It is not an entity which can be cast off like a gall-stone. Yet it must be something superadded to the human frame, which makes people afflicted with it differ from others who are in good health and have never been inebriated. What is that something? Where is its seat? Inebriety has its origin in vice, and its seat is the brain.

Every manifestation of action is attended by a chemical change in the agent producing it. The drunken man loses self-respect while under the influence of alcohol and its allies. Amyl compounds produce these changes more quickly than ethylic ethers do. Conscience loses its power. The man surrenders his will, or becomes the victim of delusions which enslave him as long as the influence lasts. As the sense of sight has its seat in some nerve-cells, so faculties and mental powers are seated in other nerve cells. If one set can be irretrievably damaged, so can the other. As the sight cells are destroyed, producing blindness, so the seat of self-respect, conscience, courage, and other virtues becomes changed—the good is made vicious. Though apparently there is no change, there is no longer a response, and as regards that particular faculty the inebriate is as a blind man. White atrophy of the optic nerve does not occur till late in life, so few children are born with this inherited tendency. So formerly intemperance was uncommon in early years, and alcoholic heredity was unusual. Of recent times, however, there has been increased facilities for the young to obtain liquor unknown to their parents, and alcoholic heredity is therefore more common. Breeders of cattle are more careful than human beings about the observance of healthful habits of life in parents. I have observed in some children born after parental addiction to drink a tendency to drunkenness easily provoked by small doses of an intoxicant. In children of the same parentage, before the intemperate habit had begun, I have seen no such tendency.

A dinner in connection with the Congress took place in the large Hall of the Westminster Town Hall in the evening, when some 280 ladies and gentlemen were assembled.

The Congress closed on July 7, in an excursion to the Dalrymple Home, the largest inebriate asylum in England.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, September 24, 1887.

THE PRESIDENT, CHARLES WARRINGTON EARLE, M.D., IN THE CHAIR.

(Concluded from page 59.)

DR. J. C. HOAG gave the following history of case of PLACENTA PREVIA.

I might refer to a case which I attended recently in which there was one point of interest; it was a

case of placenta previa which I saw a few days ago in consultation. I was called early in the morning, and on going to the patient found her in labor, the labor being a little premature by perhaps three or four weeks. She had suffered repeatedly from severe loss of blood during the last three months. At the time I saw her, the os was sufficiently dilated to admit one finger only, the periphery of the placenta could be felt throughout perhaps a fourth of its extent. She was having no particular hemorrhage at that time, but had been flowing all night. I endeavored, a few hours later, to introduce a Barnes' dilator, but failed because the cervix was very unfavorably situated, being so far back in the sacrum that it was impossible to introduce even a small dilator. I introduced a colpeurynter and left it for three or four hours, at which time the os was found to be pretty well dilated, and the remainder of the management was left to the other physician at his request, as he had not previously attended one of these cases. By external examination, palpation and auscultation, I had no difficulty in finding the exact locality of the feet; the other physician introduced his hand, and with little effort was able to pass it into the uterus; he then seized the foot through the membranes, but had great difficulty in holding it. There was a good deal of difficulty in rupturing the membranes. I tried it before the introduction of the colpeurynter, but gave it up and advised the physician to rupture the membranes wherever he could do so. He soon succeeded in doing this, and the case offered no difficulties afterwards. There was very little loss of blood. The patient was afterwards treated with two antiseptic douches per day, and has done very well since. The child is living.

DR. MERRIMAN: How much hemorrhage was there after you introduced the colpeurynter?

DR. HOAG: Very little.

DR. EARLE: Did she get an intrauterine douche immediately after the operation?

DR. HOAG: Yes, immediately; before the colpeurynter was put in and after the extraction of the child, and she has had no temperature above 99°.

Annual Meeting, Friday, October 22, 1887.

THE PRESIDENT IN THE CHAIR.

The following officers were elected for the year, 1887-1888, after the reports of the secretary, treasurer, and editor were accepted:

President.—Henry T. Byford.

First Vice-President.—Philip Adolphus.

Second Vice-President.—Addison H. Foster.

Secretary and Treasurer.—Edward Warren Sawyer.

Editor.—W. W. Jaggard.

THE PRESIDENT then delivered his

ANNUAL ADDRESS.

The secretary and editor will narrate the extraordinary work accomplished by the Society, will tell of its fame in foreign lands and its value at home, and so nothing is left for me to do except to plunge at once into the subject that I believe is of more importance, not to you as representative men in the

advance of obstetric practice, but through you, as teachers and members of a special society to the great mass of practitioners whom your words influence, than any other. I mean the influence of the development of the germ theory on the practice of obstetrics. The words of experience which comes from Fellows of this Society regarding laparotomies, Alexander's operations, and total extirpation of the uterus are most valuable to a few—possibly one in one hundred or one in one thousand, for not more than that number should do these operations, although more than that number may attempt them. But the inculcation of the duty to practice aseptic obstetrics applies to nearly every practitioner, for out of the great multitude of doctors there are found very few who do not practice this art and science. Not many months since, Mr. Lawson Tait paid a visit to Professor Tarnier at La Maternité. The professor called the attention of Mr. Tait to a linear chart on the wall of his room, showing the total death rate of women confined in that hospital from 1792 to 1886. This record is divided into three periods: the first that of inaction, in which the mortality was from 9.3 to 20 per cent.; the second, the battle of hygiene against infection and contagion with a mortality of 2.3; and third, the victory of antiseptics, with a mortality of less than 1 per cent., and in the Tarnier Pavilion, a little maternity constructed under his immediate direction, since June, 1880, with 785 deliveries, not a death has taken place.

In 1870 to 1872, the influence of microbes in the etiology of disease began to be noticed, and in 1878, Pasteur began his investigation, from which we commence data to prove what is now known as demonstrated in regard to germs. Previous to this, however (1857), Tarnier demonstrated the contagiousness of puerperal fever by inoculation. Mayerhofer (1870) viewed the micro-organism in the putrid discharges of childbed women, and Orth, Klebs, Hiller, Koch, Rokitsky, and others were conducting their researches. About 1880, Pasteur believes he saw the microbe of puerperal fever. Condensed for practical use, it has been demonstrated:

1. That the air and the water of the earth is crowded with organized microscopic beings.
2. They live and multiply at the expense of organized matter.
3. Their penetration into tissues produces disease.
4. The skin, respiratory and digestive passages furnish the channels into the body.
5. A healthy tissue has never produced a microbe.
6. Any abrasion of tissue against which these microbes come makes it possible for them to enter the system.
7. Unless germs are brought from without there can be no infection.
8. Many things in regard to the virulence, nature, attenuation, age, and development are yet under consideration.

The appliance of these principles, with many others undoubtedly, has given the victory to antiseptics in hospitals. With a mortality of only one-half per cent., but little more can be expected. But what can we say regarding the mortality in private practice? Is it necessary, is it expedient, is it possible to apply antiseptic measures? I have already remarked that the returns from private practice are

not in; they never will be, they never can be, and until it is understood that what is called by so many milk-leg is puerperal infection, that in many cases mastitis is puerperal infection, and that chills and perspiration and abdominal tenderness after confinement is not necessarily simply malaria or a mixture of typhoid and malaria, but in the main is puerperal infection—I say until these things are better understood, and the great mass of practitioners are willing to call things by their correct names, a truthful percentage of deaths from puerperal cases in private practice can never be known. From time to time indirect and unexpected testimony comes to us in regard to mortality from puerperal disease in private practice. A student of mine, now practising in Michigan, narrates to me that a neighboring practitioner has lost 12 in six months. It has become a standard quotation in obstetric literature that many years ago a celebrated obstetrician with a purulent catarrh in four years and nine months had 95 cases of puerperal fever with 18 deaths.

In one insurance company whose papers I have examined, 187 mothers of those applying for insurance had died, and 32 of these, more than 17 per cent., succumbed to some form of childbed disease. In another, with a mortality of 116 mothers, 13, or a trifle over 10 per cent, had died.

Reiterating again that the practice of clean or aseptic obstetrics will save more lives than can be saved in any other department of medicine or surgery, what are some of the means which we can use in its practice in private families—in other words, how far can we apply what has been demonstrated as reducing the mortality in hospitals to our work in families? It is not necessary to speak of isolation; apartments in private dwellings are hardly ever so crowded with sick as to insist upon this. We should, however, see to it that the air is pure, and if infectious diseases have taken place, take measures to destroy their germs. With the possibility of saving a human life, or at least averting from two to six weeks of prostrating illness with its anxieties, expense, and uncertain prognosis, it is not asking too much if there is the least suspicion of a poisonous atmosphere that the room shall be disinfected. A few hours before an expected confinement the room may be fumigated with sulphur, or the walls dampened with carbolic or mercurial water. In this way a great amount of accumulated dust is either rendered aseptic or thrown down upon the floor or carpet, which may also be disinfected. It will, of course, be nearly impossible to dispense with curtains and carpets in private sick-rooms, and in ordinary cases it will not be necessary. The furniture may be washed, however, with carbolic water, and, above all, the bed and its bedding can be clean. It may be suggested that such instructions are superfluous, and that the lying-in bed is always aseptic. In general practice this is not so, and many a practitioner has confined a woman on a mattress previously used by a diphtheric or erysipelous patient. In the main, it is because the people are ignorant of what these surroundings produce, but the average obstetrician is not free from serious responsibility that

renders this practice so dangerous, not to say sometimes deadly.

With the room and its appointments made pure, it will be well to see that the patient has some definite instructions as to her preparations. As soon as it is known that her confinement is about to take place, I am in the habit of requiring her to take a warm bath, at the conclusion of which the lower part of her person is to be washed with carbolyzed water. It is also requested that one or two carbolyzed vaginal injections shall be taken during the first stage of her labor.

I have no hesitation in saying that in my judgment, the occupant of many a lying-in chamber has yielded up her life, and the earthly career of many a babe commenced without the love and tender care of a mother, through the filth and ignorance of the so-called practical but untrained nurse. The position of nurse is too easily acquired—a woman whose husband has died, a woman whose husband is unfortunate in business, a woman who desires a little ready money—without a particle of training—without the faintest conception of what infection means, is frequently and eagerly employed to fill these responsible positions. And these midwives caring for a child with purulent ophthalmia in one house, confining a woman in the next, and washing the external genitalia of a septic patient in the third, no wonder lying-in patients die. These uneducated people—nurses and midwives—go from place to place with their little hand-bags containing dirty aprons, septic catheters and syringes, and with emanations from their persons of kerosene and valerian enter the lying-in chamber to scatter germs of infection. Some years ago, I was at a great loss to understand the cause of a mild infection in the person of a wealthy Jewess confined in her beautiful home and surrounded with luxury, and where I had taken the utmost antiseptic precautions, the incautious remark of the nurse that the patient previously attended by her had a milk leg explained it fully. If everybody is to nurse, we must insist that they subscribe to certain rules of cleanliness, and have some knowledge of the etiology of puerperal disease.

Precautions to be Observed by the Doctor.—To believe that he may carry the poison from one patient to another is his first great duty. This acknowledged, he will take some kind of care, varying from a brief exposure in fresh air to complete antiseptic precautions. One of the most able and convincing arguments ever set forth, and which accomplished a vast amount of good and saved many a mother's life, was the essay of our own countryman, Dr. Oliver Wendell Holmes. As early as 1843, while the intellect of Semmelweis on another continent was revolving the same subject, Dr. Holmes established and set forth the following: 1. Obstetricians should not take active part in autopsies. 2. If so engaged he should allow some hours to elapse, and change his garments before attending a case, and 3. The inexpediency of obstetricians attending cases of erysipelas and certain other diseases. Since we now know that, by the use of disinfectants, the contagious principle can in most cases be destroyed, it is probable that with

proper and efficient antiseptic precautions it will not be necessary for us to remain in quarantine. But the only safety in addition to knowing the virulence of germs, is to be willing to disinfect one's person and know how to do it. If we appreciate a danger we will take care to avoid it. The time has not come when many of us can refuse to do general practice, to attend cases of scarlet fever and diphtheria, and open abscesses, etc. But if we realize the fact that we have made ourselves partly or wholly septic, and desire and know how to make ourselves aseptic, we are undoubtedly in a safe position as regards our patients. It is the carelessness and inactivity of which I complain. It is futile to claim that absolute cleanliness is practiced in anywhere near a majority of cases, or that any attempt is made toward antiseptics. It is done by a few but the great mass must still be brought up to it. In 1875, Dr. Foote, in a paper on puerperal peritonitis, read before the Illinois State Society, presented evidence something like this. A doctor with a phlegmon on his finger attended a lady in confinement. She died in a few days. She was nursed by her husband, who soon after had erysipelas. In other cases diphtheria was present in houses where confinement occurred, and puerperal peritonitis followed. Another gentleman reports an epidemic in his county with 60 or 70 cases and yet nothing was suggested. This is the period of inaction with us. We are theorizing in regard to contagion and infection. The battle against them with cleanliness and antiseptics has not commenced.

As late as 1881, one of the ablest obstetricians in our State wrote: "If pains are frequent and regular and so efficient as to have dilated the os uteri to the size of a dollar, the attendant engages two fingers in its lumen and gently dilates it." The development of the germ theory has brought out the facts that such interference is not only unnecessary but is attended with danger of infection. In the majority of cases it is not necessary nor good practice to dilate the os uteri artificially; indeed our instruction and practice should be to make very few vaginal examinations. When the doctor enters the lying-in chamber he should have the supreme knowledge that he is aseptic. He should freely use the hard brush with soap and water, and it is hardly necessary for him to make more than one or two examinations. The finger should be lubricated with iodoforn mixed with sweet oil or vaseline, or a sublimate solution. Let as far possible the position of the child be made out by external examination. In addition to the doctor's clothes and person being aseptic, there should be a full and complete conception of what antiseptics and personal contact with scarlet fever, diphtheria, erysipelas, and suppurating surfaces will do. The studies of the past few years have demonstrated this. If it was suspected before its full significance was not known. Let the placenta be expressed, not following perhaps all the details of Crede but with slight traction on the cord and little pressure from above. It will not be necessary in a percentage of cases worth mentioning to pass the fingers into the vulvar opening after the birth of the child. If there is a ruptured perineum let it be closed at once, using all

antiseptic precautions. If there are contusions of the parts without laceration, or if the laceration is only very slight, wash out superficially with a little carbolic or sublimate and throw in 30 to 60 grains of iodoform. And if there is the least suspicion of a tainted atmosphere, if, notwithstanding your instruction everything external is unclean and sometimes filthy, see that there is no gaping of the vulvar orifice, and protect the parts by the application of a piece of lint, 6 by 4, saturated with some disinfectant; this to be changed as often as soiled.

Attention to these four things will absolutely change the results in general obstetric practice: 1. The antiseptic hand; 2. the clean patient; 3. few, if any, vaginal examinations; 4. antiseptic precautions to the lower part of the parturient canal. Time will hardly permit me at this occasion to more than allude to antiseptic precaution to be taken in dangerous, difficult, and impossible labors. If the forceps are used they should be thoroughly washed and brushed before introduction, and covered with vaseline and iodoform; a vaginal antiseptic douche should be given before and after the delivery of the child. As to whether an intrauterine disinfecting douche should be given after forceps delivery is perhaps an open question; but after all operations where the hand has been introduced into the uterine cavity this should always be done. If post-partum hæmorrhage take place, give a hot antiseptic douche rather than to introduce medicaments which may produce infection, and if from any cause dilators or a tampon or the colpeurynter are used, let them all be aseptic.

There are a few things applicable to patient and nurse, and it appears to me it would be well to have something in the same line presented, and upon taking an obstetrical engagement hand a copy to both.

To the Patient.—Let her understand that strict attention to instructions which you will give her will almost absolutely insure her against those complications which make the getting up so tedious. You make the following suggestions: The lying-in chamber should be in a room where no infectious diseases have been treated, and all bed clothing should be prepared by boiling in a given per cent. of carbolized water. Do not select a mattress which is filthy for fear that a better and cleaner one will be soiled by blood and other discharges during the confinement. Do not provide pieces of old comforters, the sanitary condition of which is problematical. Let all appliances for the lying in chamber be those with the history of which you are familiar. Do not borrow syringe or bed-pan, and assure yourself that those you have are boiled or washed in hot water and thoroughly carbolized.

To the Nurse.—She must be a believer in cleanliness, and must recognize that the doctor is to be director of whatever is to be done. No instruments, appliances, package of roots or herbs, or garments of any kind which have been used in other lying in chambers are to be taken to other patients. The clothes she wears are to be thoroughly washed in a carbolized or mercurial solution, and she is to acknowledge that she believes in the use of the hand

brush-and soap. She is to make no examinations in your absence, and never touch the female genital organs without cleansing her hands in some disinfecting fluid. If she has been in attendance at septic patients, she is to receive instructions from the attending physician as regards methods of personal disinfection.

DOMESTIC CORRESPONDENCE

A QUESTION IN ETHICS.

Dear Sir:—A point in ethics: How is the action in ethics of the Secretary of a State Medical Association in accord in ethics with the National Association, who, as a member of the Board of Censors of a District Medical Association, recommends an M.D. for membership in said District Association, when said Secretary knows the M.D. recommended, and elected on his recommendation, stands at that time suspended from the State Medical Association on charges preferred and sustained?

ENQUIRER.

[ANSWER: We do not know any provision in the National Code of Ethics on which an answer to "Enquirer" could be based. The Code of Ethics is designed to define clearly the relations and duties of individual members of the profession with each other, with their patients, and with the community at large. But the mutual relations of organized medical societies, County, District, State and National, must be regulated by the constitutions and by-laws that they severally adopt. For illustration: by the constitution and by-laws of the American Medical Association, no member of the profession can be received as a member who is not in good standing in the local society where he resides if such a society exists; and if any member is regularly tried and suspended or expelled from the local Society of which he had been a member, his name is dropped from the roll of members of the National Association, and remains so as long as he continues suspended or excluded from his local society. The by-laws of many of the State Medical Societies establish the same relation between the State and the County and District Societies of their respective States. If the National and State Associations thus pay due respect to the judicial and ethical decisions of the more local societies, it would certainly appear highly proper and important that the local societies should treat with equal respect the judicial acts of the State and National organizations. —EDITOR.]

NECROLOGY.

T. R. VARICK, M.D.

At a stated meeting of the New York County Medical Association, held December 19, 1887, the following resolutions, presented by the Executive Committee, were unanimously adopted:

WHEREAS, Dr. Theodore Romeyn Varick, in obe-

dience to the inexorable destiny of our race, has paid the common debt of nature in the prime of his usefulness; and

WHEREAS, We, as Fellows of the New York Co. Medical Association, to whom he was endeared by many acts of friendship, desire, in appreciation of his admirable qualities, to pay a tribute to his memory. Therefore be it

Resolved, That we have ever recognized in him a man of sterling integrity, generous impulses, and charitable deeds; one who by his achievements in surgery has advanced the knowledge of his art and added not a little to the glory of our common profession.

Resolved, That we especially cherish his name for his self-reliance and independence, his ethical consistency and his loyalty to science, his edifying remarks in debate, and his substantial contributions to medical literature.

Resolved, That we offer to his family our sincere sympathy in their sudden bereavement, and trust that their sorrow, like ours, may be mellowed by the memory of a life well crowded by works, begun in conscientious endeavor and ended not without benefit to humanity. JOHN SHRADY, M.D., Pres't.

P. BRYNBERG PORTER, M.D., Rec'g Sec'y.

BOOK REVIEWS.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS. By ROBERTS BARTHOLOW, M.A., M.D., etc. Sixth edition, revised and enlarged. 8vo, pp. xxiv, 802. New York: D. Appleton & Company. 1887. Chicago: W. T. Keener.

Additions to the amount of almost one hundred pages have been made to this edition of Dr. Bartholow's very popular book. Some things that the reader would wish to refer to and learn more of are, however, not mentioned in this edition, *e. g.*, lanoline, ichthyol, salt-water infusion, blood-injections. Among the additions we find descriptions of antifebrin, antipyrin, strophanth, sparteine, and other recent drugs. The author has, almost to perfection, that impartial judgment and ability to weigh evidence that is most necessary for a writer on materia medica; and this is shown on every page of his book. The very complete clinical index is one of the many excellent features of the book.

600 MEDICAL DON'TS; or the Physician's Utility Enhanced. By FERD. C. VALENTINE, M.D., Ex-Surgeon-General Army of Honduras, etc., etc. Sm. 8vo, pp. 144. New York: G. W. Dillingham. 1887.

There is a wonderful amount of good advice in this little book, and it is given in such an easy and interesting way that it is much more likely to be remembered by the reader. The book is written for the public in the interest of the physician. To the other "don'ts" might be added: Don't imagine that mercury can get into your bones; Don't imagine that your blood is out of order when pimples appear

on your face; Don't believe that growing plants (except highly odorous ones) in a room are unwholesome. It is rather surprising to note that the author says that "prescribing is the physician's avocation." If so, what is the physician's vocation?

ASSOCIATION ITEMS.

THE OFFICERS OF THE NEXT MEETING OF THE ASSOCIATION.

We learn that the committee of arrangements is organizing and preparing for a large meeting of the Association at Cincinnati. The work of the Association is now progressing so harmoniously that we can safely prophesy that the meeting will be a successful one in every way. We append below a list of officers and the addresses of those with whom members are most likely to wish to correspond:

GENERAL OFFICERS.

President—A. Y. P. Garnett, Washington, D. C.
Vice Presidents—Duncan Eve, Nashville, Tenn.; Darwin Colvin, Clyde, N. Y.; Charles J. O'Hagan, Greenville, N. C.; A. Stedman, cor. 14th and Stout Sts., Denver, Col.

Librarian—C. H. A. Kleinschmidt, 3113 N. St., N. W., Washington, D. C.

Permanent Secretary—W. B. Atkinson, 1400 Pine St., Philadelphia, Pa.

Assistant Secretary—Joseph Ransohoff, Cincinnati, Ohio.

Treasurer—Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa.

OFFICERS OF SECTIONS.

Practical Medicine, Materia Medica and Physiology—Chairman, —; Secretary, N. S. Davis, Jr., 65 Randolph St., Chicago.

Obstetrics and Diseases of Women—Chairman, Eli Van de Warker, 45 Montgomery St., Syracuse, N. Y.; Secretary, E. W. Cushing, 1 Hotel Pelham, Boston, Mass.

Surgery and Anatomy—Chairman, Donald McLean, 72 Lafayette Ave., Detroit, Mich.; Secretary, B. A. Watson, 124 York St., Jersey City, N. J.

State Medicine—Chairman, H. B. Baker, Lansing, Mich.; Secretary, S. T. Armstrong, U. S. Marine Hospital Service.

Ophthalmology, Otology and Laryngology—Chairman, F. C. Hotz, 181 Clark St., Chicago, Ill.; Secretary, Edward Jackson, 215 S. 17th St., Philadelphia.

Diseases of Children—Chairman, F. E. Waxham, 3449 Indiana Ave., Chicago, Ill.; Secretary, W. B. Lawrence, Batesville, Ark.

Dental and Oral Surgery—Chairman, J. Taft, Cincinnati, Ohio; Secretary, E. S. Talbot, 125 State St., Chicago, Ill.

Medical Jurisprudence—Chairman, E. M. Reid, 243 N. Fremont St., Baltimore, Md.; Secretary, C. B. Bell, Suffolk, Mass.

Dermatology and Syphilography—Chairman, L. D. Bulkley, 4 E. 37th St., New York, N. Y.; Secretary, S. F. Dunlap, Danville, Ky.

¹ The late Dr. A. B. Palmer, of Michigan University, was Chairman elect of this Section.

REPORT OF COMMITTEE ON PRIZE ESSAYS.

DR. W. B. ATKINSON, *Secretary of American Medical Association.*

Dear Sir:—The committee appointed at the last meeting of the Association, by the Chairman of the Section on Practical Medicine, Physiology and Therapeutics, to examine essays that had been offered in competition for honor prizes, wish to report that, while certain of the essays showed considerable research on the part of the authors, no award was made, as it was thought that they did not fully meet the standard that should be required.

Respectfully submitted.

H. A. JOHNSON,
N. S. DAVIS, JR.,
E. F. INGALLS.

ROLL OF MEMBERS—OMISSIONS AND CORRECTIONS.—The name of Leslie E. Tefft, M.D., of Elgin, Ill., should have been added to the roll of permanent members published in *THE JOURNAL*, of December 31, 1887, and the following corrections in regard to residences have been furnished to us: W. L. Downey, Vernon, Ill., should read *Henona*, Ill.; W. G. Putney, Sreator, Ill., should be *Prarie Center*, Ill.; A. Wetmore, Monroe, Ill., should be *Waterloo*, Monroe Co., Ill.; and the name of Albert Wing should be Elbert Wing.

MISCELLANEOUS.

DR. WILLIAM B. WILSON, of Flora, Ill., a well-known practitioner, died on January 16th. He was graduated from the University of the City of New York in 1852.

GUSTAV BERNUTZ, the distinguished French gynecologist, died at Sedan in December from chronic heart disease, the result of rheumatism. He left some valuable lectures in manuscript form, which will be soon published.

PROPOSED OPIUM LEGISLATION.—Secretary Fairchild has prepared a letter to Speaker Carlisle, showing the necessity for additional legislation to prevent the smuggling of opium, and recommending either a reduction of the duty on that commodity or its restriction altogether.

SCHOOL HYGIENE. MM. F. Dubrasi and E. Yvon have just produced a work under the title of *Manuel d'Hygiene Scolaire*, in which all necessary information is given on the situation and arrangement of schools; the personal hygiene of school children; the prophylactic treatment of contagious or other diseases; the organization of dispensaries.

LECTURES ON INEBRIETY. The President of the English Society for the Study of Inebriety, Dr. Norman Kerr, is to give the first course of medical lectures on the Disease of Inebriety and its treatment, in the hall of the London Medical Society, beginning Jan. 12, 1888. Dr. T. D. Crothers, of Hartford, Conn., has been invited to deliver two lectures on the same topic, before the Albany Medical College, Jan. 24, and 25, 1888. These will be the first medical lectures on inebriety, formally presented to Medical Societies or Medical Colleges, and will doubtless attract much attention.

DR. WELLEY M. CALPESSE, of New York, was found dead in his bed in the morning of January 7. He was born in 1826, and was graduated from the College of Physicians and Surgeons of New York in 1853. Since 1872 he was connected with the *Medical Record*, and was one of the best medical journalists that this country has produced. His pleasant face was familiar to the members of every large medical organization in the country. He was Secretary of the New York Patholog-

ical Society and of the Medical Society of the County of New York, Corresponding Secretary of the New York Academy of Medicine, Acting Secretary of the Practitioner's Society of New York, Clinical Professor of Medicine in the Medical Department of the University of New York, and Editor of the *Quarterly Epitome of American Practical Medicine and Surgery*.

NEW BOOKS RECEIVED.

Vierundsechzigster Jahresbericht der Schlesischen Gesellschaft für Vaterländische Cultur. 1886. Breslau.

Zacharias Allert's Tagebuch aus dem Jahr 1627. Herausgegeben von Dr. Julius Krebs. Breslau.

Anatomy, Descriptive and Surgical. By Henry Gray. Edited by T. P. Pick. New American from eleventh English edition, edited by Wm. W. Keen, to which is added Landmarks Medical and Surgical, by Luther Holden, with additions by Wm. W. Keen. Philadelphia: Lea Brothers & Co. 1887.

The Throat and Its Diseases, including Associated Affections of the Nose and Ear. With Engravings and Colored Illustrations. By Lennox Browne. Second edition, rewritten and enlarged. Philadelphia: Lea Brothers & Co. 1887.

Text-Book of Therapeutics and Materia Medica, intended for the Use of Students and Practitioners. By Robert T. Edes. Philadelphia: Lea Brothers & Co. 1887.

A Manual of Organic Materia Medica. By John M. Maisch. Third Edition. Philadelphia: Lea Brothers & Co. 1887.

600 Medical Dents. By F. C. Valentine. New York: G. W. Dillingham.

Fever Nursing. Designed for the Use of Professional and other Nurses, and especially as a Text-Book for Nurses in Training. By J. C. Wilson, A.M., M.D. Philadelphia: J. B. Lippincott Co.

Irregularities of the Teeth and their Treatment. By E. S. Talbot, M.D., of Chicago. Philadelphia: P. Blakiston, Son & Co. 1888. Chicago: W. T. Keener.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JANUARY 7, 1888, TO JANUARY 13, 1888.

Capt. Louis S. Tason, Asst. Surgeon, relieved from duty at Hdqrs. Div. of the Missouri, and as examiner of recruits at Chicago, Ill., and ordered for duty as Post Surgeon at Watervliet Arsenal, N. Y., relieving Capt. Henry G. Burton, Asst. Surgeon. S. O. 5, A. G. O., January 7, 1888.

Capt. Richard Barnett, Asst. Surgeon, ordered, from further duty in Division of the Atlantic, to duty at Ft. Riley, Kans., to take effect at the expiration of his present sick leave. S. O. 5, A. G. O., January 7, 1888.

Capt. A. H. Appel, Asst. Surgeon, granted leave of absence for twenty days. S. O. 1, Dept. Missouri, January 3, 1888.

First Lieut. Wm. B. Bamister, Asst. Surgeon, ordered from Ft. Lowell, Ariz., to Ft. Wingate, N. M. S. O. 3, A. G. O., January 5, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JANUARY 11, 1888.

Surgeon George Furvance, to proceed to Detroit, Mich., as inspector of an invincible property. January 11, 1888.

Surgeon H. W. Austin, when relieved, to proceed to Chicago, Ill., and assume charge of the Service. January 12, 1888.

Surgeon J. M. Gassaway, leave of absence extended fifteen days. January 10, 1888.

Surgeon C. E. Goldborough, when relieved, to proceed to New Orleans, La., and assume charge of the Service. January 12, 1888.

Surgeon Fairfax Irwin, to proceed to Boston, Mass., and assume charge of the Service. January 12, 1888.

P. A. Surgeon H. K. Carter, when relieved, to proceed to Ship Island, Quarantine, Miss., and assume temporary charge of the Service. January 12, 1888.

Asst. Surgeon F. M. Carrington, granted leave of absence for thirty days. January 10, 1888.

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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CHICAGO, JANUARY 28, 1888.

No. 4.

ORIGINAL ARTICLES.

SPINAL CONCUSSION.

Read in the Section on Medical Jurisprudence, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY N. E. BRILL, M.D.,
OF NEW YORK.

It is not surprising that actions involving the basest characteristics of man's nature, the sordid ambition and desire for gain, should be accompanied by such disgraceful and wilful mendacity as is indulged in by both sides in those courts where proceedings for damages resulting from real or fictitious injuries received, occupy the attention of the judges and juries. Wherever greed exists there will surely be found, as its accompaniment, other vices of as despicable a nature; and it is but too true that in this busy community, where the struggle for existence is the hottest and most bitter, where success is due to merit and worth, and where industry and zeal alone tend to produce that condition of life which will permit the quiet and deserved indulgence of accumulated wealth, that there is found a large class whose chief desire is to live on the result of the exertions of others, and who never hesitate to utilize any means to acquire that desired end. There is good reason, therefore, that suits for damages, brought deservedly and undeservedly, should be attended by those concomitants of avarice and greed, base deception and outrageous mendacity, and stand as a reproach to American medical jurisprudence.

Viewing the subject from the position of an impartial observer, we must unfortunately admit, that not only is deception practiced by the companies mulcted, but that no condition in life, either lay or professional, is exempt from the base influences above spoken of. The same infidelities may be found in the lawyers defending the companies, in the lawyers prosecuting a speculative claim, in the physicians giving their testimony in reference to the case, yea, even in the judges presiding, for it has been more than once the subject of remark that "even judges are corrupt," and hence not only is justice prostituted, but it is made the butt for ridicule and abuse. In addition to these causes, there are others which I shall consider when I speak of testimony and its characters, which make a suit for damages resulting from injuries a farce, and brings odium upon both the professions of law and medicine.

It is only natural that, with increased facility for travel, with more speedy locomotives, making a journey between distant points less a task than formerly, railroads are patronized by a larger proportion of the population. With this increase in the riding population, with this higher development of speed and power, accidents are correspondingly more numerous and more destructive to life, limb and property.

Where the injury received is one which is apparent to the restricted intelligence of the average jurymen, there is usually no contention, but the companies occasionally settle to the satisfaction of themselves and of the injured; but where the evidences of disease and injury are masked, where no gross anatomical changes can be demonstrated, such as in that form of spinal affection due to concussion, then the contest begins with all the ardor and fervor of battle. That the companies ought not to be entirely blamed we may well understand when we reflect that in this disease the most prominent indications of a disturbed nutritive disturbance are evidenced only by subjective symptoms, too well conned and learned by simulators, who not infrequently do nothing but ride in cars in the hope that an accident may furnish them with the cause of applying their illicit knowledge to a pecuniary gain.

In speaking of the effects of railway accidents on the central nervous system, we must regard first of all the nature of the person injured. It is an undoubted fact, and one which is supported by the experience of all neurologists qualified to give an authoritative opinion, that persons with a neuropathic tendency have, after such accidents, developed functional nervous disorders, e.g., hysteria, and that others with a hereditary history of nervous diseases have been likewise affected. Others with incipient nervous disease, which might have taken years to develop into its complete form, have after such accidents been seized with the violence of the disease in full development and soon succumbed. Hence it becomes necessary to bring out in all such cases the ancestral history, as well as the history of the patient himself, and though he be burdened by a neuropathic taint, though he be suffering from an acquired but incipient disease, the damages should be awarded just the same as if he had had a perfectly healthy ancestry, or if he himself had been possessed of all the vigor and strength accompanying the perfection of physical health; for we must be honest enough to say that were it not for the accident the claimant would still be in the necessary

mental and physical condition fit to meet with the obstacles which must be overcome to make a living, and which could not be accomplished under circumstances entailing suffering and discomfort.

While there is no reason that railroad accidents should not produce or provoke tabes dorsalis, such an occurrence is not yet proven. But it is to be regarded as established that external injuries may restart an arrested or cured ataxia and aggravate an existing one.¹

The effects of injury by railway accidents are various, and may be divided into two classes. The first class will comprise all the cases where the injury is demonstrable both by its objective signs and by those subjective symptoms which we would expect to be present from an accurate knowledge of the physiology of the nervous system. The second class will include all those cases which, from their very nature are unattended by any demonstrable signs, and which the neurologist alone can believe to be present by judging the subjective symptoms enumerated by the sufferer. It is this class of cases to which the courts are most frequently introduced, and which are most frequently simulated by individuals impelled by speculative rogues and shysters to base action for damages, and by whom even physicians are so liable to be deceived.

It is my purpose in this paper to restrict myself chiefly to the consideration of this class, merely introducing certain other forms as subsidiary, and to utilize the latter wherever they may throw light upon and assist to a more accurate knowledge of the former, and be serviceable in deducing legal conclusions.

That the consideration of even this restricted class of cases is one not unattended by difficulties, we have alluded to when we hinted at the data upon which verdicts are based. If we free ourselves from the burden which legal precedents establish in arriving at such contradictory conclusions, and keep in mind, notwithstanding the testimony only too frequently offered by railway doctors who, with the greatest equanimity and without any pangs of conscience, deny that any serious damage can possibly accrue from any concussion, and who even throw aside all the most tangible and direct evidence of injury, that some of the most serious forms of central nervous disease, such as tumors, hemorrhage of the spinal cord, and myelitis, do incontestably result; and if we weigh the evidence offered by both sides, reflecting that partisan spirit occasionally, if not frequently, leads to exaggerated statements, I think we may arrive at an honest and just conclusion, and one which the data of science will verify.

This brings us then to the consideration of the pathological effects of concussion on the central nervous axis.

Unfortunately we labor under the disadvantage of coming to any conclusion as to the pathology of this class of affections, by the fact that the literature on the subject is very limited. Reports of cases with autopsies (for it is only by post mortem evidence that the nature of disease can be determined), are very few; in fact, I have been able to find but three.

One, a case reported by Sharkey,² of a woman felled by a falling house, but who showed signs of a congenital defective development, such as partial paralysis and atrophy of right leg and arm, without loss of sensation, but with some contraction of the flexors of the arm; with exaggerated patellar and plantar reflexes, but no ankle clonus.

There were no evidences of gross injury to any of the structures containing the brain and spinal cord, or of the tissues supporting the spinal column. The congenital defect showed itself in an asymmetry of the brain, the left hemisphere being smaller than the right; and in a corresponding sclerosis of the right lateral column of the cord. "In its lower half the cord was normally firm except two or three inches in the upper lumbar region where it was soft and slightly wrinkled transversely. The upper half, though not pathologically softened, was not so firm as the lower lumbar region. In several places the right anterior cornu looked smaller than the left." Sharkey considers the autopsy to have yielded negative results, and attributes the softening in the lumbar region to post mortem changes.

The interesting legal question arises as to how far a railroad should be held responsible where an accident, occurring through carelessness of their employees, produced symptoms of disease in a congenitally deformed individual. This question was prompted by the case above alluded to, reported by Sharkey. In this case the neurologist is able to perceive that new damage was done, and what signs of defective development were original; since the examination of the spinal cord demonstrated the original abnormality and the acquired defect.

A well known case described by Leyden, of spinal concussion due to a railway accident, in which the patient's symptoms for a time were but trifling, and he, not improving and becoming unable to work, was mistaken for a simulator, and finally, after many years, severe symptoms developed and resulted in death. The history of this case showed with precision the development of the morbid process and its connection with the original injuries, and the autopsy demonstrated a picture which was essentially dependent on a traumatic origin, viz: a chronic inflammation (caseous) of the meninges, forming a peripachymeningeal tumor.

A third case is found in the coroner's report of the accident at Würzburg, where a man of 23 died three and one-half days after the accident, with symptoms of coma and dyspnea, and chyle in urine. The autopsy showed innumerable small punctiform hemorrhages in the brain substance, about 1 cm. in diameter. The skull and spinal column were intact. The patient, after the accident, developed symptoms and signs which could not be attributed to the original abnormality, and which Sharkey rightly considers to be due to the concussion accident. For this further disability, restricting still more the field of usefulness of the individual, I am of the opinion that a compensatory remuneration should be given, which would be both equity and justice.

In view of the light which subsequent investiga-

¹ Pett. *Annales Gén. de Méd.*, Oct., 1877.

² Bram, Vol. vii, p. 99, 1885.

tions have thrown upon Erichsen's explanation of the morbid anatomy of the cord after these accidents, I do not think that anybody now accepts his explanation as at all plausible. That there is no inflammation of the spinal membranes has been demonstrated on innumerable occasions, both clinically and on post-mortem examination. Indeed, his term spinal meningitis is inaccurate, as there has never been demonstrated any inflammation about the spinal cord. It seems that the molecular disturbance which the cord undergoes from the sudden shock is one involving the ultimate anatomical elements, the nerve cells, interfering with their nutrition and their vitality, and thus producing the features which are so common to this affection.

Erichsen's description would at the present time cause his cases to fall under the category of spinal irritation. Although there can be no doubt but that we are deeply under obligations to him for his exposition of a subject which had been veiled in uncertainty and doubt, still we ought not, on that account, accept as dogma what has not been satisfactorily proven.

Berlin³ compares the effect of concussion on the central nervous system to that of a blow to the eye, as a result of which the retina developed a slightly diminished acuteness of central vision and presented, on ophthalmoscopic examination, a clouded and dulled appearance. Both of these conditions disappeared after a short time.

Thomsen and Oppenheimer together studied the disturbing effects of railway accidents on sensibility and on the special senses; and Putnam,⁴ of Boston, records a few cases where concussions have produced, in male subjects, impairment of the sensibility, general and special, of one side of the body, and sometimes in a slighter degree, of the other side. In three of the latter's cases (five are recorded), no claims for damages were instituted, and hence there was no ground for simulation or deceit, so that Putnam's findings are trustworthy. The latter also supports the views of Oppenheimer and Thomsen with regard to the significance of hemi-anesthesia, which does not necessarily justify the diagnosis of hysteria. Charcot,⁵ in a recent contribution to the subject, characterizes the mental and sensory disturbances of "railway spine" as hysterical, and contradicts this important conclusion of Oppenheimer and Thomsen: that in a certain class of cases irreparable damage to the nervous system is done; by the very easy process of ignoring their strongest argument; so that one feels tempted to compare his procedure to that indulged in by "medical attorneys." Oppenheimer and Thomsen regard such symptoms as optic nerve atrophy, paralysis of certain pupillary movements, and epileptic attacks, as definite symptoms which neither simulation nor hysteria can mistake, and which indicate organic change of some kind. Certainly their conclusions are in accord with the

current views of all neurologists except M. Charcot.⁶ They are therefore justified in protesting against M. Charcot assuming that the usual capricious change of signs found in female hysteria is replaced by melancholia and depression in male hysteria, and thus justify the diagnosis of "railway spine" as a hysteria. They rightly argue that the sufficiently vague picture of hysteria will dissolve entirely if its best criterion, the hysterical mental state, be abandoned.

It is high time that neurologists, with all due deference to their scientific acumen and ability, should abandon the custom of exhibiting their ignorance by ascribing all phenomena which they cannot explain on an objective basis, to that vague disease, hysteria. This has its analogue in the practice of those physicians who call all, to them inexplicable phenomena of disease, malaria, and which is but a cover to hide their inaccuracy, or but an expression of a want of knowledge.

Here is a symptom complex, indicating a disease which is allied to the neuroses, like hysteria, like spinal irritation, like epilepsy, but which differs from them in many particulars, the latter indicating integral changes. But because there is a similarity in the picture to these neuroses, there can be no justification in combining all the neuroses under the term hysteria. Oppenheim considers this an important point: that in his cases epilepsy in all its forms (the epileptic attack, *petit mal*, psychical equivalent), is a most conspicuous feature, while hysterical convulsions of the form which Charcot describes with "grands movements are de circlé, etc.," are subordinated features; and he repeats the statement that anesthesia, with the involvement of the sensory functions, is not characteristic of hysteria.

Oppenheimer⁷ reports the following:

Case 1.—C. B., æt. 28, fireman. Thrown from horse attached to engine. Struck head on pavement and cut a gash over right eye and wounded hand. Unconscious. Subsequently, scintillations and convulsive seizures. In attacks tore about, lost consciousness for some moments, at others suddenly jumping up and forcibly attempted to escape, and restrained only with difficulty. These attacks preceded by pain in scar and scintillations in right eye. After attacks severe right-sided headache for half hour. The patient himself observed that the skin in certain spots is insensible. When washing he noticed, on wetting his hair, that he could not feel on anterior half of the scalp. Sexual power gone. No disturbance of intelligence or memory.

Examination of sensation shows anterior half of head anæmic to tactile and pain irritation, also anæsthetic over forehead to eyebrows. Lower third of right forearm and hand insensible. Muscular sense of right upper extremity much injured. In

³ Wanderversammlung der Südwestdeutschen Neurologen und Internisten in Baden-Baden, am 21 u. 22 Mai, 1881.

⁴ The Medical Legal Significance of Hemi-Anæsthesia after Concussion Accidents.

⁵ A propos des six cas d'hystérie chez l'homme, Leçons, etc. Progrès Médical, 1885, No. 18.

⁶ The wisest are not proof against error, and a mere error, especially where it is honestly admitted, can constitute no reproach to the fame of M. Charcot. But his unfortunate experience in the past should teach him the need of caution, and that it is unwise to categorically formulate. He had the misfortune to discover lateral sclerosis in a woman with spastic contracture, which he regarded as hysterical. It is true that rather than abandon his diagnosis, M. Charcot resolved to sacrifice every definition of hysteria; but the neurological world at large were not prepared to join in the sacrifice.

⁷ Arch. fur Psychiatric, Bd. xvi. 3, s. 743, 1885. The following two cases are selected from the ten recovered, and the enumeration of subjective symptoms and objective signs taken mostly from his summary.

lower extremity diminished sensibility in lower portion of thighs and feet. Also disturbed muscular sense in feet. Absent, sole reflex. Vision: scintillations; consecutive narrowing of visual field for white and colors on both sides.

Westphal's Case.—The patient whom I present to you (*Berliner Gesellschaft für Psychiatrie und Nervenkrankheiten*) was perfectly well up to January 14, 1886, when he was the victim of a railway accident. He was the baggage-master in a freight train, and suddenly felt a concussion, followed by another, was hurled forward and fell unconscious to the floor. Became conscious in five or six minutes. When removed from the wreck he showed no external injury, but was immediately very much excited. Sleep was restless and broken by wild dreams. Subsequently he complained of pains in the head and back; he had paræsthesiæ of different kinds, sensation of deafness, etc. When examined the psychical anomalies and disturbances of sensation were predominant.

Patient is fearful, ill-tempered (*verschieunt*), and is troubled with hypochondriacal hallucinations (*vorstellungen*). Sleep is bad; even during the day he is seized with intense fear, which at times has no defined motive, at others is called forth by the sound of the locomotive of a train. Occasionally he has seen forms and was much worried thereby. The psychical anomalies of a hypochondriacal-melancholic character are very constant. Of a very peculiar character are the anomalies of sensation, which are ever present and do not change in intensity and extent. Sensation remains in only circumscribed portions of the surface of the body, viz.: in the region of the nasal orifices, on the lips, over the lower half of the sternum, over two symmetrical regions on the anterior surface of the forearm, over the most of the region between the left seventh and ninth cervical vertebrae on left side, over two symmetrical spots on the inner surface of the upper thigh, and finally, on the penis and scrotum. While on these small regions of the skin tactile and painful irritations are well defined, and temperature sense is present, on all the rest of the surface of the body (including the mucous membranes) sensibility is entirely abolished to all irritations.

The muscular sense is also not intact, still, its exact extent has not been clearly determined.

With disturbances of sensation are also disturbances of special sense: the field of vision shows limitation for white and the colors, smell and taste are almost entirely abolished, and acute hearing on both sides, especially left, diminished. Ophthalmoscopic examination shows nothing abnormal. Patient complains of photophobia and scintillations before the eyes. No signs of paralysis of the ocular muscles are present.

As far as the motility of the extremities is concerned the strength of the hands is very little; voluntary movements are accompanied by tremor, which occasionally presents itself in rest.

Patient walks carefully, with difficulty, and soon

tires. When examined on his back, quite a stiffness in the joints is perceived. Tendon reflexes are of the usual strength; the active movements are executed with slight force.

These are but two of ten recorded cases of Oppenheim, and are here utilized to bring more forcibly to your consideration the psychical and physical disturbances. In all the cases recorded the chief psychical change is the emotion of fear; the patients are sad, have painful conceptions, shun society, are fond of isolation, are indisposed to speak, and when they do speak harp on their sufferings and their disease; are easily disposed to cry, and some have a morbid feeling of distrust. Their fears are undefined ("I feel as if I had committed a crime, and as if some misfortune were going to happen to me," etc.).

The most complain of insomnia and some of restless sleep disturbed by fearful dreams, in which the history of the accident plays the chief rôle. The psychical disturbances are hypochondriacal in character, and the patients exaggerate the slightest uncomfortable sensations, brood over them and continually complain of them to the physician.

As far as the intelligence is concerned there could not be demonstrated any inordinate disturbance in any of these cases. These persons are not psychically weak, but they are not able to undergo any continuous mental exertion. All complain of weakness of the memory, but a more minute examination shows that their memory has not suffered essentially from its normal. They can recall quite well the events of the far past; but, on the other hand, they forget commissions which have been recently intrusted to them, also names, residences, etc. Only in one case was there conspicuous weakness of memory, in that events which ought to have definitely interested him were entirely obliterated from his memory.

All the patients report attacks of syncope. Frequently there was but an evanescent vertigo with indistinct consciousness; at other times the attacks could not be differentiated from those of *petit mal*. In one case there were distinct epileptic attacks; the patient fell suddenly to the ground with loss of consciousness, and lay motionless for many hours. After these attacks there was a marked change for the worse in their general condition. In the first case reported, attacks of complete loss of consciousness occurred, preceded by an hallucinatory condition of cloudiness, of dreaminess and of fear, called forth frequently by external causes—signal of the fire engine. After these attacks the sensorial anæsthesia also deepened, and the memory of the occasion was broken by gaps and was incorrect.

Subjective Signs.—Patients complain of pressure in the head, more or less of headache and pain in the back of the neck, dull sensation in skin of scalp, also peculiar paræsthesiæ in the same place (as if worms were creeping under the skin and like sensations), feeling of giddiness, of drunkenness and vertigo. The vertigo is to a greater degree continuous, and increases occasionally so that the patients have to hold on to prevent themselves from falling. In a few cases there was obstinate vomiting.

* *Berliner Gesellschaft für Psychiatrie und Nervenkrankheiten*, Mai 11, 1886. *Arch. für Psychiatrie und Nervenkrankheiten*, xvii, S. 284, 1886; also xvi, S. 747, 1885.

They complained of flashes before the eyes, or of a cloudiness as if from smoke or as if it were continually raining finely. On their attempts to read the letters seem to dance and merge into one another; at times the field of vision is darkened for a few seconds. In one case there was the conspicuous phenomenon of xanthopsia, which occasionally occurred.

Many complain of obstinate *tinnitus aurium* and of impaired hearing power. Smell and taste disturbances are almost unspoken of.

All complain of pains and feeling of tension in the back and loins, and indicate themselves by their difficulty in walking the truth of these sensations. In a few instances there was a distinct girdle sensation, and a girdle pain was indicated.

In five cases sexual power was entirely obliterated.

An almost constant indication of the disease was the disturbances of sensation. These sensations present in the different cases the greatest differences in intensity and mode of distribution. Usually there is sensory anaesthesia, *i. e.*, dulness of sensation is not only confined to the skin and mucous surfaces, but also to the organs of special sense. The hemianæsthesia which is spoken of by French authors as its characteristic form occurred in our observations but seldom; but, on the other hand, it was not uncommon that one half of the body suffered intensely while the other half but partially.

A few times there was *bilateral symmetrical* anaesthesia, the anaesthesia being distributed to symmetrical spots on both halves of the body. With a peculiar preference were the hairy scalp and the forehead to the eyebrows the seat of the disturbed sensation. Again, there are greater or small regions over the extremities in which altered sensation was prominent. The presence of entirely circumscribed spots of sensation within an anaesthetic territory is remarkable. In one case the fingers are sensitive, while the other parts of the upper extremities have no sensation. In the lower extremities these exceptional spots are restricted to the soles of the feet.

The least constant in these cases is the disturbance of the so called muscular sense. A remarkable phenomenon is the fact that in some cases the patients complained after one half to one hour of the pain produced by the prick of a pin to the anaesthetic part.

Sometimes functional disturbances are confined to an individual organ of special sense, at others to all of them. Limitation of the visual field is the constant factor in the group of sensible-sensory anomalies; still, there are cases in which, notwithstanding the disturbances of the functions of the other special sense organs, there is no marked alteration in excentric vision.

As far as the results of the disturbances of sensation on other troubles are concerned, these are not, for the most part, material. Delicate manipulations with the hand are hindered by the dulled sensibility, but usually only so little that the affected individuals can help themselves very well with the use of their eyes. The limitation of the excentric vision does not materially influence the determination of position in space. Hirschberg,⁹ though, calls attention to the

fact that excentric vision is not entirely obliterated in the apparently absent part of the visual field, else these patients could not determine their position in space. But Oppenheim¹⁰ says that in a part of his cases excentric vision in the obliterated territory was entirely gone, in others the movements of large objects were certainly recognized; but that in his cases there was a good harmony, for the most part, between the degree of visual field limitation and the disturbance of the ability to determine the position in space, since the limitation of the visual field from 30°-40° does not produce any prominent disturbances.

Not infrequently are there skin territories which manifest pain when disturbed. Especially is this true of the lower region of the back; if pressure on the spinous processes evoked much pain, a few cases manifested even on slight touch of the skin marked painful expression.

Corresponding with the diminished sensation there is diminution of the *reflexes of the skin and mucous membranes*. The *sole reflexes* may be entirely absent. Absence of *corneal reflex* was never found in these cases. *Tendon reflexes* are either normally present or are slightly exaggerated; their absence was not observed.

There is a certain retardation and want of energy to *muscular movements*, although, on account of the attending pain, it is difficult to determine. On attempting to raise the leg from its position the patients double up with pain, press their hands over their hips, etc. Almost typical is the position of the body in standing, walking, in sitting erect, and taking their seat. Each patient endeavors to protect his vertebral column from every concussion, as a result of which he does not move the upper half of his body, arises by supporting himself with his hands and slowly draws himself up by their means. They walk slowly, spread their legs apart; usually in walking they place their hands over the small of the back. Swaying on closed eyes was not observed.

A moderate degree of tremor is present. At times the disturbance of motion has the form of a hemiparesis, and in these cases the anaesthesia has its chief seat in the paretic half of the body, but the hypoglossal and the facial regions are not involved.

The bladder function is frequently disturbed, the urine only being passed after much pressure; in one case urination could only take place in the sitting position; and one patient had to use the catheter.

Constipation is a common complaint. The foregoing is the common symptom picture. The following are the differences from the stereotyped form: One case presented disease of the optic nerve on ophthalmoscopic examination. A definite atrophy of the optic nerve was found in another; right iridoplegia and inequality of the pupils in another.

Signs of organic changes; differential diagnosis: Iridoplegia, optic nerve atrophy.

Signs not found in the neuroses: Abolition of sexual power, bladder paresis, girdle sensation.

Oppenheim's conclusions are partly as follows:

⁹ Sitzung vom 11. Mai, 1885, der Gesellschaft für Psychiatrie und Nervenkrankheiten.

¹⁰ Loc cit.

That sufferers from these accidents present developed disease symptoms which do not indicate any individual disease; and do not present many variations among themselves, notwithstanding they possess common features.

That a part of these cases present a mixture of psychosis and neurosis.

That a great percentage of the cases show features indicating an insidious, continuous organic disease of the nervous system.

Since the result of these trials depends to a great part upon the evidence and testimony offered and given by men who are supposed to occupy the highest position in their professional sphere, who are credited with such an accurate and complete knowledge of the special subjects that their opinion is considered to be authoritative, it behooves us to consider whether the popular ideal of an expert is substantiated by the exhibitions of the majority of those who have appeared so frequently in the arena of litigation. Have this majority the necessary qualifications of training and education to give that evidence which in its effects may work incalculable damage by permitting the guilty to escape or bringing hardships to the innocent? As a silent, observant witness to numerous litigations, involving not only property but life, I can fairly say that it is exceptional to find one who has the necessary amount of knowledge, whose mind is sufficiently well educated to reason and to assimilate scientific truths, who has sufficient industry and energy to devote himself to almost incessant study; for the strides which science is taking are so great, that it requires all the time and attention of the scientific man to keep pace. But there are a few men who have these abilities, and who hesitate to enter courts to give the results of their study on account of the opprobrium which rests, and with justice, on experts and expert testimony. What a benefit to mankind would it be if the courts could be cleansed from those experts who linger about the court-rooms or in neighboring grog shops¹¹ waiting for an anticipated case, who, having procured by some occult means political influence, receive the appointment of judges as commissioners *de lunatico inquirendo*.

Indeed and in fact the "political doctor" is as much to be feared as the "railroad doctor."

It is not without just cause that so much complaint has arisen over this class of testimony, and is due not only to the venality and bias of the expert and his ways, but to the ignorance of the lawyer. The framing of hypothetical questions and the desire of lawyers to obtain answers to them independent of the relations of the assumed facts to the case under investigation, has wrought more harm than good, and tends to stultify the expert giving his testimony, the lawyers themselves being partly to blame for the effect produced on the public mind in their estimation of expert testimony.

Another evil factor which operates is the system of badgering and attempting to confuse the witness which lawyers undertake in order to diminish the value of the expert's testimony by involving him in

a contradiction. It is not my purpose to undervalue the system of cross-examination. Far from it! for I consider that an honest cross-examination is the best means at our command by which we can test the ability and qualifications of the witness. But I think it high time that the arbitrary cross-examination employed by lawyers should cease. I have often listened to them attempting not to gain information, but simply to waste the time of the witness. (We must consider that a physician's time is not only peculiarly valuable, but is often devoted to the saving of life,¹² as well as to alleviating suffering.) It is indeed unfortunate that one has no redress therefrom, yet we can console ourselves with the fact that the oftener this species of examination is indulged in, so much the oftener will the lawyer utilizing it find himself digging his own grave.

We may ask ourselves: What constitutes and what factors enter into the formation of an expert? This question can be answered from two aspects: First, he whose education has been so conducted that he is thoroughly well acquainted not only with all that is known of the special subject in his own country, but with the entire literature of the subject and, in addition, whose mind is so trained that his powers of observation and reasoning are such that he is able to form rational conclusions from observed cases, be they few or be they numerous. For I am of the opinion that one case well conned and well observed is of more value than the careless and superficial examination of many. Second, he may be designated an expert, whose experience has been so extensive in personal examination and reflection about cases that, with a relatively limited knowledge of the special literature, he is quite capable of giving a trustworthy opinion. The latter's powers of observation, however, must equal those of the former, and his mind must be equally as logical; otherwise all the experience thus gained would be useless and valueless, and represent only barren isolated facts, from which there can be no deduction. I think the expert belonging to the former class exceeds the one belonging to the latter in value, for he has not only an individual experience to guide him, but is thoroughly and perfectly acquainted with the experiences of all who by their recorded works are qualified to give authoritative opinions; whereas those of the second class have but an individual experience which, however great, cannot approach numerically that of the collected experiences of the rest of the scientific world.

It would seem useless for me to emphasize the fact that the expert must, in addition to his educational qualities, be thoroughly honest. It seems to me, though, that such an emphasis is necessary, for I have not infrequently heard the same expert give different answers to the same scientific fact on different occasions. This is one of the reasons that I consider a rigid cross-examination as the best means to weed out the dross in our midst. Fortunately, we have stenographic reports which accurately record the

¹¹ I have here in mind the cross-examination of one of our most learned specialists, who was assured that he might leave in time to perform an operation which held in the balance life and death, and was detained by utterly useless questioning for 1½ hour beyond the agreed time.

statements of medical experts, and fortunately we have lawyers who know how to utilize such reports. It is thus that cross-examination not only reveals the status of the expert as to knowledge, but as to morality. For is not the inference deduced from hearing an affirmative and subsequently, on another occasion, a negative of the same scientific fact, according as such an expert (!) is testifying for one or the other side by whom he is engaged, sufficient to stamp him as dishonest and purchasable?

I would venture to say that, could we rely on the morality of experts, we would not find so many arrayed against each other; for, were all actuated by the desire that truth should prevail and with no regard for the condition of their pockets, there would be in the great majority of litigations but one expressed opinion. How can a fact be anything else than a fact, and how can the significance of a certain regular combination of signs or symptoms be considered in any other than their true significance? There may be honest differences of opinion in reference to the application of solitary facts or the significance of individual criteria, but there can be otherwise no honest cause for arriving at contradictory conclusions. Even in this connection there is more or less cant connected with the expression "honest differences of opinion." I do not think I need hesitate to say that the so-called "honest difference of opinion" is in nine cases out of ten due to absolute ignorance of the subject on the part of witnesses, and that this too frequently cited phrase is but one of the means by which astute, if not thoroughly honest lawyers try to cover and conceal the ignorance of their expert.

Let the expert ever remember that his claim as such stamps him as a public man, whose actions are always viewed with microscopical exactness, and whose weaknesses are ever ready to be seized upon and magnified by a zealous and watchful public. If he pay attention to this it will not be long before he will give up that pernicious habit of arguing the case, and confine himself strictly to his proper position: the adviser of the court, counsel and jury. I am aware that an evil jealousy exists among this class of witnesses, and that they, by having become embittered by the greater success of some of their colleagues, have been led to step across the bounds of professional conduct, which should be an open, honest expression of opinion, to one of mean, small and contemptible inuendo, which by its hidden sting is calculated to rob the testimony of the opposing witness of its force. These men have become too cowardly to openly attack their opponent with the weapons of knowledge, or enter the lists in a fair contest of condition and intelligence, but must assail their antagonist with the meanest aspersions. The day has passed when it is considered a reproach and degradation for a man who has been honestly engaged in a study of comparative anatomy, and has utilized all the means at the control of science to become thoroughly acquainted with the subject, and who, having succeeded in this most laudable object, turns his attention to the instruction of others, to receive the application of the term "horse doctor," which was once suggested by an envious expert to

the attorney engaged in cross examining an opposing witness in a most noted recent trial. Let the expert be perfectly fair and stand only in the position of one who is citing facts and elucidating truths which shall enlighten the court and jury, and assist in bringing the latter to an honest verdict. The jury are certainly intelligent enough to immediately perceive the expert-physician attorney, and to reason that he is a biased partisan. I think it was chiefly this habit of arguing the case which was indulged in by the expert witness for a large railroad corporation in a recent trial in New York, which induced the jury to give such an exceptionally large amount of damages, although to my mind the case was a sham one, and the railroad unjustly mulcted. The following was a portion of the expert's testimony:

Q. Will you be kind enough to tell the jury what is known as spinal concussion, in your opinion?

A. That is a term, spinal concussion or railway spine, or nervous shock due to railroad accidents, which has become very fashionable in the last two or three years; it was first discovered by Mr. Erichsen, an English surgeon, and has been spoken of by several of the English authorities. I look upon it as a very dangerous term, because it opens the door to unprincipled persons, who make use of it, when there are no nervous symptoms, to prosecute corporations.

Dr. Spitzka,* in commenting on this testimony, said: "It is remarkable that the dangers of such an answer to the defendant were not appreciated. There is no jury of average intelligence that could not detect the bias of the witness giving it, and who would not naturally judge from the methods to the justice of the cause in whose interests they were employed. But in this case it seems that the witness was put on the stand to argue the case, for the counsel calling him followed up the above cited with the following:"

Q. Have you read Erichsen's work on nervous diseases?

A. I have, sir.

Q. What is your judgment about that book?

A. I think it is a *very dangerous book*.¹⁶

Q. A dangerous book?

A. Yes, sir; because it prevents scientific truth.

"If authorities are to be pronounced misleading and dangerous merely because they inculcate teachings which happen to support 'the other side' in a litigation, we may as well abolish them all."

Testimony like this is not calculated to strengthen the opinion of the public in the integrity of character of the expert, nor to produce a feeling of conviction as to the importance of expert testimony. Indeed, the people have just cause to complain and have firmly expressed their convictions as to the unreliability and unimportance of this testimony.

Is there not some cure? Assuredly, yes; and it

¹⁴ Supreme Court, County of Kings. John T. Harrold against the New York Elevated Company. Case on Appeal, 1890. Ref. Proceedings of the Society of Medical Jurisprudence and State Medicine, Vol. 1, p. 145.

¹⁵ Spinal Injuries as a Basis for Litigation. E. C. Spitzka, M.D. Read before the Society of Medical Jurisprudence and State Medicine, June 14, 1888.

¹⁶ Italics the writer's.

is to be found in the very weapon in the hands of the attorney: cross examination. It does not require an extended course of searching to elicit the incapability of an ignorant witness, nor to impeach his veracity where he has made his pecuniary aims the chief standard of his testimony. I can advisedly state that a rigid cross-examination by a competent lawyer is the best means to either substantiate the position of the educated and scientific witness, as it is to discover and reveal his ignorance, his want of knowledge of scientific facts, and his character.

It is useless for me, in such a paper, to enter more fully into the discussions of the means suggested to strengthen the position and importance of expert testimony. It may be sufficient to state that all such suggestions are inapplicable in the present state of a Republican government, where politics and political persuasion and influence are the most important factors in selections to official positions. Hence the practice of Continental governments in appointing those men who, by their work, have advanced themselves to the highest pinnacle of knowledge in their special subjects, to the position of expert adviser to the court, beneficial as it is abroad, would not be accompanied by the same felicitous results in this country.

HYPERTROPHY OF THE PHARYNGEAL TONSIL.

(Adenoid Vegetations of the Vault of the Pharynx.)

BY H. L. GRADLE, M.D.,
OF CHICAGO.

The frequency with which children are allowed to suffer for years, without recognition of the trouble, from blockage of the naso-pharyngeal space, seems to the writer sufficient excuse for presenting this article. Admitting that these notes are but the confirmation of the work of others and do not claim to be an extension of our knowledge, it still seems desirable to me that this affection should be brought more to the notice of the profession at large, and not remain unknown outside the ranks of rhinologists.

Most of the standard works on medicine scarcely mention this disease, if they refer to it at all, and even in the latest edition of Gray's Anatomy the existence of a normal pharyngeal tonsil is simply admitted in one short sentence. As a matter of fact, it is my luck quite frequently to see children whose nightly rest has been constantly disturbed, whose hearing has been imperiled or damaged, and whose growth even has been stunted by an easily remediable anomaly that had been overlooked or ignored for years by the family physician.

The adenoid lymphatic tissue which underlies the mucous membrane of the pharynx is collected in a larger mass at the roof of the pharyngeal vault above and behind the posterior choanae forming the pharyngeal, or Luschka's tonsil. On its pharyngeal surface this organ is raised into ridges running in a sagittal direction, which ridges atrophy gradually after the age of puberty is passed, at least in most persons. This tonsil is very frequently hypertrophied.

Normally the rhinoscopic image of the adult pre-

sents some 5 to 10 millimetres of clear space above the upper margin of the posterior choanae not filled by the glandular mass. Not rarely, however, the tonsil is enlarged sufficiently to make the roof of the pharyngeal vault flush with the border of the choanae. Such minor degrees of hypertrophy are often harmless, but not invariably so. But from this scarcely morbid enlargement there occur all gradations, up to a tumor filling the entire pharyngeal space down to the level of the soft palate.

In youth the enlarged tonsil is always lobulated. The hypertrophy involves not only the body of the tonsil but also the ridges, giving the mass a coxcomb shape with irregular fringes and polypoid prominences. If the tumor be allowed to remain beyond the age of puberty it acquires gradually a more regular outline by reason of the atrophy of these fringes and projections. The more lobulated and fringed such a tumor, the greater is usually its vascularity and the softer its consistency, which makes it more difficult to grasp this soft movable mass with any instrument than the harder tumors of more regular shape. The rarity of extensive hypertrophy of this tonsil in adult life renders it likely that the enlargement gives way to atrophy after the period of growth.

The disease is much more common than is ordinarily supposed. More than one-fifth of the children brought to me for ear disease suffer from this affection. In adult life, however, the predisposing conditions of ear disease multiply in number, so that the frequency of pharyngeal vegetations is considerably less in adult aural patients.

The causes leading to this enlargement are not yet evident. It is often seen in scrofulous children, but my experience inclines me to think that it is more commonly the cause than the result of the condition known as scrofulous diathesis. Such at least is the conclusion suggested by the improvement in general health after operative removal of the enlarged pharyngeal tonsil. The query whether the tubercle bacillus might be the cause of this disease, has been answered in the negative by the researches of Trautmann.¹

There is evidently some irritative process favored by certain climatic influences which leads to the enlargement of the pharyngeal tonsil and very often also of the oral tonsils, and of separate lymphatic follicles in one and the same individual. Nasal, or pharyngeal catarrh, may complicate the condition but it can occur without any evidences of inflammation of the mucous membrane.

The direct symptoms are those of impeded nasal respiration, especially of the expiration in the case of softer tumors, which act like a valve. The interference with the movement of air through the nose depends on the size of the swelling and on its vascularity. Since the enlarged pharyngeal tonsil is capable of holding a variable amount of blood, like the entire mucous and submucous lining of the nose, any acute catarrh, or even the recumbent position, will cause it to swell. Hence the annoyance is most marked in bed. The children breathe with their mouths open and

¹ Anatomische, path. und klinische Studien über Hyperplasie der Rachenmandel. 1886.

usually snore when asleep. The voice has a characteristic "dead" timbre; there is no nasal resonance. Similar as in the obstruction due to intense nasal catarrh, the final *n* sounds like *d*, the *m* like *b*. The speech is so characteristic in well-marked cases, that it enables the expert to make a diagnosis at once. The enlarged tonsil often gives rise to venous congestion in adjoining regions. Not rarely the eye-lids and lips of such little patients are swollen and show large veins. Quite commonly the cavernous tissue of the nose is distended and adds its obstructive influence to hinder still more the nasal respiration. Trautmann claimed that the congestions were due to pressure of the enlarged gland upon the pharyngeal veins. But his own plates show the existence of such extensive venous anastomoses that this mechanical explanation seems to me insufficient. Possibly the venous distension may be the result of augmented venous pressure during the impeded expiration. Possibly nervous influences may account for the relaxation of collateral veins. Trautmann also attributed the frequent enlargement of the oral tonsils accompanying adenoid vegetations to this venous stasis, and claimed that the hypertrophy of the oral tonsils often recedes after extirpation of the pharyngeal gland. This latter statement I cannot corroborate from my own experience.

Reflex symptoms often accompany this affection. The children may complain of frequent dull headache, mainly in the occipital region, which does not return after the operation. Sleep is often interrupted by sudden starts or persistent restlessness, probably due to harrassing dreams or nightmare. A large number of my patients had vesical incontinence and soiled the bed every night. But since this annoyance did not disappear within the first few weeks after the operation I cannot claim with any positiveness that it was caused by the nervous irritation due to the enlarged tonsil, although its frequency renders a causative relation probable. Occasionally a persistent cough was observed, like that of a mild degree of bronchitis, which ceased soon after the operation. Quite a number of my patients were puny and scrofulous children of retarded growth and impaired vigor, though not considered really sick by their parents, merely delicate. Since in some eight or ten of such cases a decided improvement occurred in the growth and vigor and general health of the children after the operation, I cannot but conclude that the tumor in the naso-pharynx was the cause of their delicate health.

The organ which is principally imperiled by the hypertrophied pharyngeal tonsil is the ear. There are probably very few cases of extensive enlargement which are not complicated some time or other by disease of the middle-ear. Not rarely, there is simply impaired hearing without any active symptoms referable to the ear, and without any evidence of implication of the tympanum beyond retraction of the drum head. This trouble is probably due to diminished patency of the Eustachian tube on account of congestive swelling of the mucous membrane. Beyond the removal of the enlarged gland there is scarcely any treatment required for the ear, although

a few inflations of the ear hastens the restoration of hearing. But graver and more acute complications also occur in the form of either suppurative or protracted catarrh of the middle ear. These secondary affections once started are now to a certain extent independent of their original cause. They require treatment of their own and can mostly be cured without removal of the enlarged tonsil, but are very apt to relapse, until the predisposing condition is obviated. Fortunately the ear complications are as a rule amenable to treatment, though a long-neglected catarrh of the middle-ear may lead to permanent lesions.

The diagnosis of hypertrophy of the pharyngeal tonsil is suggested whenever a child presents more or less persistent obstruction of the nose, a dead timbre of the voice and occasional nasal hemorrhages (although the latter have been rare in my experience). It should be thought of in every case of infantile ear disease. If feasible the diagnosis is made absolute by the use of the rhinoscopic mirror. But the mirror can only rarely be successfully used in children of less than 8 or 10 years of age. In such unsuccessful cases the diagnosis depends upon the use of the finger. The curved index finger introduced through the mouth behind and above the soft palate, detects a soft, flabby mass filling the naso-pharynx, instead of the smooth wall of the normal space. The examination is very unpleasant, and in pronounced cases is really unnecessary.

No successful treatment has yet been devised except operative procedures, but the results of thorough operations are all that can be desired. While nitrate of silver, in the form of dilute spray, may relieve the symptoms if aggravated by catarrh, it cannot cause absorption of the enlargement. Canterization with the galvano-cautery is more efficacious, especially if we use a broad platinum blade, like a gouge, and thus remove fragments. But this procedure is quite painful and occasionally leads to suppuration of the middle-ear. With the ring-shaped knife, originally used by Meyer, and passed through the nose, I have had but little experience. It has seemed to me more unpleasant to patients than instruments introduced through the mouth. The artificial nail, or nail-shaped curette, fastened to the finger, I have never used. I doubt whether the finger can find enough space for movement to do thorough work, and I do know from experience that the insertion of the finger is more disagreeable than that of any instrument. My largest experience has been with ring-shaped curettes, bent at not quite a right angle, the ring being in the sagittal plane, which are rotated and pressed laterally in the direction of the cutting edge. These instruments are quite efficient, but must be inserted a number of times in order to cut off all the projections that so easily elude the grasp.

Since the appearance of Trautmann's work, I have mainly employed his curette, with fair satisfaction. It is the form of a round sharp spoon, 11, 13, or 15 millimetres in diameter, the shank of which is bent at an angle of 150° about 3½ centimetres from its end. The patient's head being suitably held, the spoon is introduced behind the palate and forced up-

ward along the posterior edge of the vomer, its cutting edge, being of course, directed towards the rear. It is then pushed like a gouge backwards and downwards, and on withdrawal a fragment of the gland will be found in its concavity. It is at once reinserted a little more to one or the other side, and used again until the space feels clear as far as can be judged by sounding with the curette. If any remnants are left the operation is repeated after the traumatic congestion has passed off, that is, some five days later.

All operations with curettes are followed by abundant hæmorrhage, although this has never been alarming in my experience, in about 75 operations. It can always be checked by gargling with ice-water, and will generally cease spontaneously inside of some five or eight minutes. The operation is moderately painful. As I have learned from older children and adults, cocaine does not relieve the pain materially, but swabbing the pharynx up to the vault with a 10 per cent. solution of cocaine lessens the discomfort and retching produced by the instrument. I have never yet used an anæsthetic, having always been able to persuade the children to submit, since the pain is of very short duration. Hopmann,² however, has reported 69 operations on anæsthetized children, without accident. The entrance of blood into the larynx was prevented by not carrying the anæsthesia too far. A drawback to all curette operations is the difficulty of finishing the operation in one sitting on account of the speedily exhausted patience of the subjects. Sometimes four or five sittings are required to clear the naso-pharyngeal space.

The operation has become much more elegant in my hands since I have had a pair of cutting forceps constructed on the principle employed by Loewenberg. This author's gouge-forceps are so clumsy as to frighten patients, while the cutting end is too small to grasp much. Accordingly I have had a forceps constructed³ of a stout pair of scissor blades, the handles of which, about 15 centimetres long, are suitably bent so as not to obstruct the view. The



cutting end is a hollow triangle, base upwards, 17 millimetres high and 13 mm. wide, which arises 3 cm. from the scissor screw, sloping upwards and slightly backwards. The cutting edge is the upper base which is slightly curved and slopes backwards so as to conform with the roof of the pharynx. Small springs attached externally to the bent end prevent the fragments of tissue from falling into the larynx. The instrument is inserted behind the palate, the spring between the handles being allowed to separate the blades as far as possible. It is then pushed upward and closed, whereby everything pendant from the roof is snipped off as far as it gets into the grasp of the instrument. If the operator feels that the

scissors have cut off the tumor, the blades are at once opened and applied in another position; if it is not completely detached, it is torn off by extracting the instrument and then reinserting it if necessary. With reasonable tolerance on the part of the patient, the operation can be readily finished in one sitting. The hæmorrhage is less than in curetting, and the entire operation does not last as long. I have never had any accident or unintentional wounding of parts, not even pinching of the palate, in the fifteen times I have used this new instrument.

No unpleasant reaction has ever occurred in my experience. There may be slight oozing of blood for a short while, but this has always been insignificant. The pain ceases within a few minutes. The wound causes often some congestion of the nasal mucous membrane, so that the nose is more stuffy during the first night after the operation, especially if remnants of the pharyngeal tumors are left behind. Rarely have I seen slight fever within the first twenty-four hours, and never longer than within this period.

Central Music Hall.

ABDOMINAL SECTION FOR RUPTURED TYPHOID ULCER, AND FOR INTESTINAL OBSTRUCTION.

BY R. B. BONTECOU, M.D.,

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My attention having recently been called to an article on this subject in the *Medical News* of November 26, 1887, and also to another article in the same journal of December 24, 1887, by Prof. Thos. G. Morton, of Philadelphia, I think it may be of interest to some to publish the following case, as I was not aware when I performed the operation that it had been done for that purpose.

James Daley, æt. 25 years, unmarried, of temperate habits, was taken sick at his boarding-house about October 1, 1887, and came under my care October 6, with high temperature, right iliac tenderness and gurgling, and with the other symptoms and general appearances of typhoid fever, which disease had been prevailing to some extent in the city. He persisted in having on his clothes and sitting about the rooms for five days, trying to fight off the disease, but finally consented, as his lodgings were not suitable for a sick person, to go to the Marshall Infirmary, where I was attending. His history, as given by the resident house surgeon, is as follows: James Daley, teamster, æt. 25 years, admitted to the Marshall Infirmary on the evening of October 11, 1887, suffering from typhoid fever, with temperature of 102°. He continued in apparently a comfortable condition, without complications, with temperature 102° mornings and 104° evenings, until the 15th inst., when he had a morning temperature of 104° and complained of nausea and right iliac pain. On the 16th increased pain in the right iliac region and tympanitic condition of abdomen. On 17th morning temperature 104°, hicough and vomiting of prune-juice matter and bowels constipated and tympanitic, and still complaining of the abdominal pain; legs drawn up;

² Deutsche med. Wochenschrift, 1885, p. 572.

³ Made by Sharp & Smith, 73 Randolph St., Chicago.

cold, clammy perspiration, countenance pale and pinched and eyes sunken; was seen at noon by the attending surgeon, who diagnosed peritonitis from intestinal perforation.

I found him in collapse, with every indication of peritonitis from perforation, and stated the case fairly to him that he would certainly die, and to his question if anything could be done, replied that an operation, although offering very little hope, was the only thing left that could be done. He consented. As soon as the necessary preparations could be made he was anesthetized with ether and the section made under strict antiseptic rules in the median line. On opening the peritoneum a considerable quantity of flaky dark colored serum escaped. I at once went for the ileo caecal portion, and found perforating ulceration of the appendix near its base. I ligated this on the proximal side and removed it. On further search I found an oval perforation in the ileum about ten inches from the colon and about one line in its longest diameter. The intestine was apparently sound in the vicinity and elsewhere, but deeply injected and rather dusky in color. No other perforation could be found. I turned in longitudinally the portion of intestine including the perforation, and sutured its peritoneal surfaces by Lembert sutures and, after cleansing the abdominal cavity with a weak bichloride solution, closed the wound. The man expired before he had recovered from the anesthetic. I was led to perform the operation on general principles, as the only thing to be done where intestinal perforation is recognized, appreciating the fact that it is a mortal accident, and that with the light and aid of antiseptics I have the faith and hope yet to save some case of the kind. The operation cannot impair the condition, and if the accident is recognized soon after its occurrence, there is a chance of success. Unfortunately, in this case, forty-eight hours had elapsed after the first perforation. Drs. Lomax, W. W. Seymour, H. Gordinier and N. F. Martin kindly assisted me in the operation.

NOTE.—The condition of the patient in this case was such that time was an important element in the operation, otherwise I should have practiced what I have before intended in cases of perforation of the appendix, and that is, after cutting off the process on the proximal side of the perforation, to invaginate the cut extremity and sew the peritoneal surface together with a close continued suture, thereby hoping to get a more reliable union of the parts than might obtain if the process was simply embraced in a ligature with the mucous surfaces in apposition.

Abdominal Section for Intestinal Obstruction.—Jas. E. Evans, unmarried, æt. 24, occupation moulder and of temperate habits, ate baked beans on Monday, November 28, which made him sick, gave rise to colic that night, and had no passage from his bowels since 24th or 25th of November, but continued in pain of a paroxysmal nature which required large anodynes to mitigate. He came under my care December 1; found him in bed suffering great pain, referred to the pit of the stomach and he thought if that could be relieved he would be all right. I could make out no tumor there, and treated him on general

principles with poultices and anodynes of morphia and belladonna, and used large injections in the knee chest position which washed the whole colon out clean, and very little feculence was noticed. A stomach tube was kept in place in the descending colon to permit flatus to escape. His belly was at no time tympanitic, but was everywhere dull on percussion except in the track of the colon. This fact satisfied me that the small intestines were all full of feces which it was impossible to move, and that the obstruction was in the lower part of the ileum. December 7, his condition as to vitality being good, pulse 80, temp. 99, and unmistakable stercoraceous vomiting occurring, I obtained his consent to an operation, and at 9 o'clock in the evening, assisted by Drs. Gordinier and W. W. Seymour and J. W. Morris, I made the operation with strict antiseptic precautions and, with a median incision of four or five inches, went at once for the ileo-caecal region and found the ileum tightly incarcerated under a diverticulum of the omentum about eight inches from the colon. I put two ligatures on the band which formed the constriction and cut between them, liberating the gut, which presented when released, the appearance of an ivory ring about it, the constriction had been so tight. This was accomplished in nine minutes from the commencement of the abdominal incision; some manipulations to coax the contents through the strictured gut occupied a few minutes more, and the wound was then closed by Dr. W. W. Seymour, who used for the first time a very good mounted needle invented by him for the purpose of abdominal sutures. Dry iodoform dressings were used and a broad bandage of adhesive plaster, completely encircling the abdomen and hips, such as I am accustomed to use for separation of the symphysis pubis after delivery, kept his parts comfortable and secure, and he at no time since betrayed any abnormal temperature or pulse. He was from December 25 to 29 troubled with diarrhoea, but is now well and dressed, and would be on the street were it not for the unusually cold weather (January 1, 1888).

Abdominal Section for Intestinal Obstruction.—Mr. Wheeler, æt. 77, widower, retired merchant, of temperate habits and large physique, had been suffering obstruction for one week, and when called in consultation with Drs. W. H. Hall and A. Hewett found him vomiting stercoraceous matter, and was in a condition of collapse, with pasty skin. The case was stated to him that he was dying and that nothing further could be done but an operation, to which he consented, and as soon as preparations could be made he walked from his bed to the dining room, where a table had been prepared under the chandelier, and after ether and every antiseptic precaution had been taken the operation was done through a very adipose wall and the intestines all found quite empty, with no tendency to protrude. I searched the ileo caecal region first, and not finding any trouble there, ran the small intestine through my fingers until I reached close to the duodenum, and there found the loop, some inches in extent, closely strangulated; it was, however, easily released, and the abdomen cleaned and closed. He was put to bed, had several

movements from his bowels, but never rallied from the collapse in which I found him. I think he would have recovered if operated on a day or two earlier.

Abdominal Section for Intestinal Obstruction.—Kehn, æt. 50, married, occupation pork butcher, intemperate, had obstruction several days, and when I was called in consultation, April 4, 1885, was in collapse and dying, having had stercoraceous vomiting twenty-four hours or more. The statement was made that nothing could save him but operation, and that that was doubtful, preparations were hastily made, and within half an hour I made the section through a fat abdominal wall and at once went for the ileo-cæcal region, which was found all right. The constriction was found by a little further searching, in the lower third of ileum, and was easily relieved by gentle manipulation with the fingers. The operation was made at 12:30 P.M., and he did not rally from the collapse we found him in, and died at 3 P.M. the same day. Drs. M. H. Burton, whose patient he was, and Drs. Akin and Morris assisted me. An operation a few hours earlier in this case would probably have saved him.

Abdominal Section for Supposed Perforation of the Appendix.—Mrs. O., æt. 45 years, a widow, in good health up to May 25, 1887, when she was seized with severe pain in the lower part of the abdomen, with great tenderness in the right iliac region and a bloated feeling all over the belly. She applied poultices, took castor-oil, which operated, and kept her bed until May 29, when I was called and found her with temperature 102° and pulse 115, abdomen tumid and very sensitive all over, but especially so in the right iliac region. She maintained the dorsal decubitus with limbs flexed. Satisfying myself by digital examination per vaginam and from her history that there was no hæmatocele, I concluded that there was peritonitis from intestinal perforation, probably of the appendix. It was difficult to learn by palpation the exact condition on account of the great sensitiveness, but manifest dullness all over the right iliac region and a faint sign of fluctuation seemed to indicate localized peritonitis with suppuration, and this was verified by aspiration May 31, when I proceeded, with the assistance of Drs. W. W. Seymour and H. Gordinier, to cut down between the anterior spine of ileum and umbilicus, and getting through the abdominal wall with an incision four or five inches in length, came upon a collection of pus mingled with feces. The pus cavity extended down into the pelvis, but appeared to be walled in by the adherent intestines on its upper and inner border; in fact, the parts all around were so infiltrated and matted together that I was unable to find (without unwarranted disturbance) the source of the feculence, and contented myself by cleansing the cavity and closing the wound over a rubber tube of large calibre. The fever declined at once and in a few days disappeared altogether. The drainage tube was kept in place three weeks and the cavity washed out through it several times daily. Feculence ceased to escape from the tube in ten days, and in one month she was able to walk a little, although she could not stand erect on account of intestinal adhesions to the abdominal wall. Her bow-

els were moved with difficulty from the same probable cause. September 20, 1887, an abscess made its appearance on the site of the abdominal wound, but healed in a few days after discharging its contents, which appeared to be simply pus. The woman has since that time remained well and active.

Abdominal Section for Obstruction of Bowels.—Mrs. R., æt. 52 years, mother of several children, was in ordinary good health up to November 25, 1877, when I saw her in consultation with her attending physician, Dr. H. C. Murphy. There had been complete obstruction of the bowels for twelve days. On the 26th, 27th and 28th every means we could devise failed to relieve the obstruction, but the patient would not consent to an operation until Nov. 30, when stercoraceous vomiting occurred and, the patient consenting, I opened the abdomen by a free median incision of the segment. In the lower segment there was great distension of small intestine and ascending colon, and also a great engorgement of their vessels. The obstruction was readily found at the portion contiguous to the gall bladder, and was included in a scirrhous mass involving a portion of the gut. Presuming this to be malignant, I did not attempt its removal, but brought the caput coli to the inferior angle of the wound and stitched a portion to the integument large enough to allow of a free opening being made in the gut and kept patent. A very profuse discharge of feces escaped at once through the artificial opening made, and continued until her death twenty-four hours later. There did not appear to be any peritonitis; she was feeling well four hours before her death, when she accidentally discovered with her fingers the large pins which held the abdominal wound together, and she fainted and did not rally from the syncope or shock. Antiseptic precautions were not used in this case.

Explorative Abdominal Section.—Mr. M., æt. 74 years, a healthy, active man, was in his usual health up to thirty-six hours before I saw him in consultation with Dr. M. H. Burton, his attending physician, and with Drs. W. Akin, J. W. Morris, H. Gordinier and Sabin, July 31, 1885. He was suffering great pain, and his position and rational and physical signs indicated peritonitis from perforation. Bowels constipated, abdominal walls hard and tympanitic, pulse frequent and feeble, and general indications of approaching collapse. I made median section in the lower segment at noon July 31, and at once went for the ileo-cæcal region, expecting to find perforation of appendix. None, however, was found either in it, or the colon, or small intestine, or gall bladder. Turbid serum escaped in considerable quantity when the peritoneum was opened, and the intestines and reflected parietal peritoneum showed acute peritonitis. The abdomen was washed out with a weak carbolic solution and the wound closed, leaving in its lower angle a drainage-tube dipping down into the bottom of the pelvis, through which his abdominal cavity was irrigated with a weak solution of chlorinated soda. The peritonitis, however, continued, death taking place forty-eight hours after the operation. There was no history or appearance of injury, and the cause of the fatal peritonitis is conjectural.

Case 2 illustrates the advantage of early operative interference while the vital forces are good; for notwithstanding the *serious* character of the strangulation in that case, he made rapid and uninterrupted recovery; whereas in cases 3 and 4, the obstruction was from adhesions that were comparatively slight, so that they were relieved by gentle manipulation, and yet the cases proved fatal; because operative interference was deferred until collapse was announced. Case 1 was in an almost hopeless condition when seen by me. If I had operated on him on the 15th inst. he would have had a fair chance of recovery. I hope soon to read of some one doing this successfully for typhoid intestinal perforation. If you are sure that perforation has taken place, do not hesitate, for the operation cannot impair, but certainly *improves* the chances of recovery.

MEDICAL PROGRESS.

ADVANTAGES AND RISKS OF PURGATION DURING CONVALESCENCE FROM ABDOMINAL SECTION.—MR. JOHN D. MALCOLM records an interesting case bearing on this subject. The patient, a woman, æt. 57 years, had had an ovarian tumor removed. On the evening of the third day, and all through the fourth day, there was a tendency to sickness and abdominal distension, but flatus passed freely from the rectum. On the fifth day that portion of the bowel was found to contain feces, and a small enema produced a copious evacuation, after which the feeling of sickness and the distension passed off. The action of the bowels was followed by considerable pain in the right groin about the position of the pedicle, and the temperature rose in a few hours to 100° in the axilla, but again gradually fell to 98° on the seventh day after operation. The bowels moved seven times between the fifth and tenth days, and much flatus also escaped. During this time, however, the pain in the right groin increased, until the patient could not bear the slightest pressure over this part. The rest of the abdomen became slightly distended, but was free from tenderness. The administration of $\frac{1}{8}$ of a grain of atropia and $\frac{1}{2}$ of a grain of muriate of morphia, repeated every four hours, eased the pain; but the appetite became very bad, and the patient felt constantly sick after the eighth day. She also lost strength, and her pulse, which had been down to 84 and of good character, gradually rose to 100, and became very feeble. On the tenth day her temperature, which had not been above 98.6° for two days, also began to rise a little, and reached 99.6° in the axilla at 9:30 A.M.; she had been very restless all night, could not take any food, and felt very sick, while the abdomen had become more distended. This grouping of symptoms after abdominal section I have learned to associate with obstruction in the bowels, which may lead to a rapidly fatal termination of the case. In the belief therefore that my patient was in extreme danger from this cause, and that the best method of treatment of this condition at this

stage is by the administration of a purgative, I gave her a pill containing 1/2 of a grain of calomel, 1/2 of a grain of jalap, 1/2 of a grain of croton oil, and 1/2 of a grain of iodo-cathartine, 1 grain of extract of aloes, 1/2 of a grain of jalapine, and a little ginger. The patient had frequently used similar pills, prescribed by her own medical attendant, Dr. M. Carey, of Haverhill, and they had not moved the bowels, and her general health. On this occasion the pill acted in two small evacuations, and a dose of Huxham's water, given next morning, was followed by rather a profuse stool. The last of these was at 5 P.M. on the seventh day after operation. Twelve hours after the pill was given the temperature had risen to 100° in the axilla, perspiration was extremely profuse, and the patient had become alarmingly weak, but she was then able to take food with but trifling sick. After the bowels were quiet so no more of the nature of opium were given to the rectum, and the patient had a good night's rest. She was much stronger next morning, and this improvement continued. The pain in the right groin, however, became more severe, and the tenderness radiated over the abdomen to some distance from this part. The temperature continued feverish but irregular until the thirteenth day, when it fell to normal and remained so. On this day also the pain shifted upwards and towards the right loin, and next morning there was only slight tenderness on pressure in the groin, and none in the loin. Now, however, the patient once complained of pain when I applied pressure over the colon in the region of the gall-bladder. The seat of tenderness afterwards shifted from time to time along the course of the colon, and finally was found low down in the left groin, on the fifteenth day after the operation. The bowels had then been quiet for four days, and I warned the patient that she would probably soon have an action of the bowels with considerable pain. That afternoon several large, very hard fecal masses passed into the rectum, whence they were removed with some difficulty by the nurse, after which recovery was uninterrupted.

This case is very instructive in connection with the question of the administration of purgatives during convalescence from operations for abdominal tumor. It is evident that the masses of feces which were removed on the fifteenth day after operation were the cause of all the difficulty and danger in this case, by producing a partial obstruction in the bowel. The fecal accumulation had been impacted in or near the cæcum, and the efforts of the bowel were insufficient to remove it, probably on account of the condition of paresis of the intestines which I have shown follows abdominal section, and is "an important factor in the production of obstruction of the bowels in these cases." When, however, the impacted mass was dislodged by the aid of the purgative medicine, the sickness and distension at once disappeared. At the same time the temperature of the patient rose distinctly, and this in spite of a most profuse perspiration; pain in the groin became more severe and diffuse, and the patient's strength failed

¹Wide abstract of paper read before the Royal Medical and Chirurgical Society, the Lancet, Oct. 22, p. 170.

alarmingly. It is evident, then, that in this case purgation relieved a partial obstruction in the bowel, but at the same time increased, or rather renewed, the inflammation in and around the pedicle. Many cases have taught me that this is the way in which purgation may be beneficial during peritonitis after abdominal section. Purgation during peritonitis may therefore be necessary, and proper treatment, but it is inaccurate to say that the purgation cures the peritonitis. On the contrary, the fact must be recognized that the administration of a purgative in such cases is resorted to at the risk of increasing the severity of any inflammation implicating the wall of the gut; and in severe constipation, even when there has been no recent inflammation, a smart purge may produce a great deal of inflammatory action in and around peritoneal adhesions.—*Lancet*, Dec. 24, 1887.

PARTIAL EXCISION OF THE LARYNX.—The following are the results of partial excision up to the present time: In twelve cases, where half the larynx was removed—in ten cases for carcinoma, in two for sarcoma—only one patient died from the direct effects of the operation. The wound is far easier to dress and the patient's condition less desperate than when the entire larynx is excised. In six cases the larynx has been completely, and in two partially, removed for sarcoma. The after-history of one of the complete operations is lost; of the remaining six it appears that one was quite well and free from recurrence six years after operation; one was well two years after; one died of phthisis a year and a half after excision of the larynx, without a sign of recurrence of the local disease; one died of recurrence of the sarcoma seven months after operation; and one fifteen months after. In the two recorded cases of partial excision for sarcoma, one was free from recurrence "some time after the operation;" one died ten months after from pulmonary complication, without recurrence of the new growth. Of the thirty-five cases of excision for carcinoma which recovered from the operation (excision, as above noted, proved directly fatal to thirty patients), twenty died within a few months from recurrence. Of the remaining fifteen, the history of one case is lost; two died of pneumonia at the end of three and four months respectively; seven cases were yet alive when these statistics were prepared, and free from recurrence at periods ranging from fourteen months to four years. Thus only one patient could be considered cured. Out of seven partial excisions of the larynx for cancer, one died of the operation; three died of recurrence within seventeen months, and in the three which remain there was no recurrence, but only fourteen months had elapsed in one of these, eleven in another, and an unrecorded space of time in the third. It must be observed that many of the above cases appear to have been badly selected, the patient being in an unsatisfactory state of health, or the disease much advanced. Unfortunately, the survivors, not very numerous at the best, too often find but little comfort in life after the operation. Solis Cohen remarked at the International Medical Congress in London, in 1881, that recovery and mere survival

after the operation are two different things; and Sir Morell Mackenzie observed that a patient after extirpation of the larynx was usually in a condition "of great misery." Professor Lefferts, of New York, stated that the "main reason for the patient's subsequent discomfort, not unusual, however, in like cases, was the impossibility of closing the large defect in the neck, by any form of artificial apparatus, so as to permit of perfect deglutition." Since 1881, cases have been noted where the patient's condition was not in any instance altogether unsatisfactory. Still the frequency of fatal lung complications above recorded is suspicious. The loss of voice can be remedied, more or less, by the use of an artificial larynx. After partial operations the patient can often swallow easily within a few days; but after complete excision, with extensive removal of the surrounding parts, deglutition may be impossible without assistance, and the patient may need to be fed by means of a funnel and tube. Altogether, excision of the larynx is a gloomy subject to contemplate. For sarcoma, partial or even complete removal is not very unsatisfactory, provided that the disease has not advanced too far. Partial excision for carcinoma is also no desperate operation, but it has not been performed with sufficient frequency to allow of a very decided verdict. As to complete excision for carcinoma, it is highly unsatisfactory. As a rule, it appears to mean death; as an exception, it signifies a short but harassed lease of life, with constant fear of recurrence and of lung complications. Truly a patient under such conditions may say of his life, like the Duke in *Measure for Measure*, "If I do lose thee, I do lose a thing that none but fools would keep."—*British Medical Journal*, Nov. 19, 1887.

CYCLICAL ALBUMINURIA.—In his *résumé* of an article on this subject in the *Zeitschrift für klinische Medizin*, Bd. 12, Hft. 1 and 2, G. KLEMPERER, of Berlin, says:

Cyclical albuminuria is to be regarded as a well characterized type of disease. It occurs most frequently in young people, and it seems that males are most subject to it. Besides a somewhat anæmic and emaciated appearance there is no especially striking symptom of the disease. Every sign of Bright's disease is absent in this affection, and most of the patients are nervous (neurasthenic). Their complaints are of an undefined nature: pain in the head, weakness of the back, relaxation and uncomfortableness, want of energy, and indisposition to physical and mental exertion. Gastric troubles are often prominent, such as loss of appetite, eructation after eating, and a feeling of fullness and distension. The chief symptom is the appearance of albumin in the urine, that is generally only accidentally discovered by an insurance or a military surgeon. The entire absence of albumin in the night urine has been a common symptom in all the cases observed hitherto. During the course of the day the amount of albumin in the urine is subject to variations, which seems to follow certain laws in every case, but are different in different cases. In Pavy's cases the albumin rose from Roth-

ing to the maximum very slowly, and then gradually fell off to nothing again. During the evenings the urine in these cases is free from albumin. It is characteristic in these cases that the maximum always occurs during the forenoon, but in Bull's cases the maximum was noticed at 5 P.M. In the case seen by Klemperer there were two maxima, one in the forenoon and one in the evening. When the cyclus has been established it occurs, unless influenced by external cause, with great regularity. The researches of Bull, Noorden, and Klemperer show that the time of taking food does not affect the time of appearance of the albumin. But it seems certain that muscular movements have a great influence on cyclical albuminuria, for absolute rest will usually stop it with certainty. But muscular movements do not always cause albuminuria in these cases, for in some of Noorden's cases as well as in Klemperer's case the urine remained free of albumin after long continued walking. It seems also that prolonged and severe mental work may increase the albumin. It seems, further, that good feeding has a good influence on the affection, and as the patient becomes more healthy and stronger the albumin diminishes. The diagnosis can be made with certainty by a systematic examination of the urine for a few days, if the urine, not pathological in other respects, contains no albumin early in the morning, and then has a regularly appearing amount of albumin once or twice during the day. The variations follow a cycle, running from entire absence of albumin to a maximum, and then falling off to nothing, having a second maximum after the second zero point has been reached. Very characteristic is the lessening of the albumin when the patient remains in bed during a part of the day. The neurosthenic symptoms often lead to an examination of the urine, and thus the true nature of the malady is determined. The history of the cases thus far reported shows that cyclical albuminuria follows a chronic course, but Pavy has seen two cases of spontaneous recovery. It does not run over into renal disease, and is compatible with perfect health. Sometimes it disappears entirely, while in other cases it persists for years without disturbing the general health. The prognosis is good. So far as treatment is concerned there is but little to be said. But it seems that a strengthening treatment, in which the anæmia and neurosthenia are made to disappear, will exert a wholesome effect in curing the albuminuria.

PHYSIOLOGICAL ACTION OF ARNICA MONTANUM.—DR. H. A. HARE, of Philadelphia, says: When a dose of from five to ten drops of the officinal fluid extract of arnica root is injected into the jugular vein of a dog weighing from fifteen to twenty pounds, the pulse rate and arterial pressure are for a moment depressed, but in the course of from thirty seconds to a minute return to their normal position. In about five minutes, however, the pulse beats become one-third slower than they are normally, arterial pressure remaining unchanged, save that the pulse-waves usually produced by inhibitory stimulation give it a greater range. If under these conditions

the pneumogastric nerves be cut, the pulse instantly increases its rate considerably beyond the normal, though not to the point generally produced when the peripheral vagi are in a normal state. This difference was, however, more marked in some cases than in others. We may therefore conclude that the drug stimulates in small ordinary doses the vagal centre in the medulla, thereby producing a slow fall pulse, and that it has an effect on the peripheral ends of the vagus, for the reason that when these nerves are cut, the pulse rate only increases somewhat. That this failure of the pulse to become very rapid after vagal section is not due to cardiac depression, is proved by the strong pulse-waves, and the increase in arterial pressure, rather than a fall.

When a much larger dose (5 c.c.) is given to a dog of twenty pounds weight, the primary slowing does not take place, but in its stead the pulse becomes very rapid with a fall of arterial pressure, which, however, soon recovers itself, the pulse still remaining rapid. Under these circumstances it was found that galvanizing the vagus nerves, even for as long as one minute and a half, failed to produce any cardiac slowing, proving palsy of peripheral vagi, and this was also proved by the fact that when the vagi were cut and their peripheral ends stimulated by small doses, large doses immediately produced a rapid rate, but no more than a momentary fall of arterial pressure, lasting, perhaps, twenty seconds and due simply to the sudden entrance of the drug into the heart *en masse*.

Arnica therefore slows the pulse in ordinary medicinal dose by stimulating the pneumogastrics both peripherally and centrally, increasing the fulness of each pulse-wave, and also slightly the arterial pressure. That the increased arterial pressure is chiefly due to increased work done by the heart is strongly indicated by the fact that in none of the experiments was arterial pressure influenced to any extent, by any dose, except when an enormous amount (5 c.c.) was injected rapidly into the jugular vein, when there was for the space of from ten to fifteen seconds a fall in pressure very evidently due to momentary heart-failure, as the pressure returned at once to normal as soon as the heart freed itself from the volume of the drug. That the fluid extract used was pure I am confident since it was prepared by a reliable druggist especially for these experiments. *Boston Medical and Surgical Journal*, Jan. 12, 1888.

RESECTION OF THE STERNUM FOR RETROSTERNAL ABSCESS.—PRIVAT DOCENT J. VON RUSTIZKY, of Kiev, reports the following interesting case in the *Deutsche Zeitschrift für Chirurgie*, Bd. 26, Hft. 5 and 6: On December 23, 1886, a man, æt. 23 entered the city hospital. He had always been healthy, and had never had syphilis. On December 7, the third left molar tooth began to be painful, and soon there was a swelling on the left lower jaw, which extended along the whole neck, and was most marked in the jugular fossa. When he entered the hospital he was so weak that he could not raise himself from the bed without assistance; pulse between 80 and 90, and evening temperature 38.5° to 39.7° C. On the

right and left sides, at almost corresponding spots, the skin of the lower jaw were openings, and there was another further under at the level of the thyroid cartilage, to the left of the larynx. From these openings flowed a considerable quantity of a brownish, bad smelling fluid, that streamed out on pressure and when the patient coughed. Through the openings the finger could be carried easily under the surrounding skin, so that the denuded bone of the jaw and the pulsating vessels of the neck could be felt. The percussion-sound of the anterior chest-wall was dulled on both sides to the lower border of the third rib; over the sternum the dullness extended two or three fingers' breadth lower. Over other portions of the chest the percussion-sound was normal. On auscultation of the upper portion of the thorax succussion was heard.

On December 24, a median incision was made in the jugular fossa down to the sternum, and about half a litre of purulent fluid evacuated by the patient's coughing and by a low position of the upper part of the chest, so that the dull percussion-sound became tympanitic. An elastic catheter passed 11 or 12 cm. into the mediastinum, and the large pulsating vessels were easily felt with the finger. The cavity was washed out with a solution of salicylic acid, a thick drainage tube put in, and an iodoform dressing and a thick layer of sublimate gauze put on. This was changed daily, and a solution of boric acid was used a few times. The wounds of the neck were cleansed and dressed in the same way. Under this treatment the fever was kept down, the flow of pus became less, and the general condition much better. But about the middle of January the patient began to complain of pains above the sternum and in the sterno-clavicular articulation, with severe chills and an evening temperature as high as 39° C. Swelling of both sterno-clavicular articulations was found, and less marked swelling, on both sides, of the sterno-costal articulations of the first and second ribs. The skin over the upper third of the sternum was reddened. Fluctuation was detected at the ends of the clavicles and of the first two ribs. The outflow of pus from the wound became greater, and the patient more emaciated.

The second operation was performed on February 3. The patient being completely narcotized, an incision was made through the skin and periosteum in the middle line of the sternum down to the extremity of the fifth rib, and another along the clavicles. The periosteum was separated from the bone by means of a raspatorium, though some particles of bone adhered to the periosteum. The sternum was impregnated with pus, and on the left side, at the second costosternal articulation, it was so thin that the removal of the periosteum here caused an opening through which, by means of a chisel, the manubrium was separated on one side from the body of the sternum and on the other from the posterior periosteal layer. The manubrium was now raised, and separated from the ribs and clavicles. The posterior periosteal layer of the upper part of the sternum was then separated from the bone, and this part of the bone removed by means of Luer's forceps. Since

the posterior layer of sternal periosteum was very defective and only partially covered the wound, the upper part of the mediastinum was laid open, and the pulsation of the great vessels was distinctly seen. There was slight hæmorrhage from a cutaneous vein, but it was checked with torsion-pinchettes. All granulations (*membrana pyogenica*) were scraped out with the sharp spoon, the horizontal incision united by continuous suture, and the whole wound filled—after being douched with salicylic solution—with iodoform gauze and covered with sublimate gauze. The patient was shown at Society of Physicians of Kiev on March 27. At that time he was well, and had no circulatory or respiratory disturbance, though the thorax was considerably retracted. The shoulders were nearer together, and the sternal ends of the clavicles and the ribs almost touched. The sternal defect was closed by a firm cicatrix. After the operation the first and third left molars and a sequestrum of the lower jaw were removed.

LEUKÆMIA CUTIS. — HOCHSINGER AND SCHIFF (*Viertelj. für Derm. und Syph.*, 1887, 3. Heft) add another to the few cases already published, in which the skin was the seat of lymphomata. A child, 8 months old, badly nourished, and with great pallor of the skin and mucous membranes, had over the whole body, but particularly on the skin of the face and head, numerous nodular, flattened, rounded seats of infiltration of the size of a pin's head to a hazel-nut. They were movable with the skin over the subcutaneous tissue, were firm, of a yellowish-red color, and not tender. Some of them were depressed in the centre. There was slight desquamation over some of them, but they were neither excoriated nor ulcerated. The sub-maxillary, cervical, axillary, and inguinal glands were hard and swollen. The spleen and liver were enlarged, and there was a moderate amount of ascites. The white corpuscles of the blood were proportionately increased. A histological investigation was made, and as the result of the investigation the authors state that: 1. In the course of leukæmia the cutis, as well as the internal organs, may be the seat of secondary leukæmic lymphomata. 2. The lymphatic infiltration begins in the blood-vessels which surround the sweat-glands. 3. The fat lobules lying immediately under the cutis are the chief seat of the disease, the upper strata of the corium being relatively free. 4. The external manifestation of leukæmic infiltration of the skin is that of a small nodular affection of the cutis, which usually appears after leukæmic affection of the lymphatic glands. At the same time a previous condition of chronic inflammation of the skin, if accompanied with stasis of the lymph, may lead to diffuse and early affection of the integument. 5. The nodules show little tendency to ulceration. Kaposi, with reference to a case of the kind which he had published, proposed the name *lymphoderma perniciosa*. The authors prefer the term which they have chosen — leukæmia cutis. They consider that this affection is distinct from mycosis fungoides or lymphodermie cutanée of the French.—*London Medical Record*, Dec. 15, 1887.

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MEDICAL LEGISLATION.

The necessity for greater uniformity in the laws of the several States intended for the regulation of medical education and practice, is becoming annually more apparent. During the last ten years several States have followed the example set by the Legislature of Illinois, and enacted laws creating State medical boards authorized to grant the license to practice medicine in all its departments, to such persons as should present a diploma from a legally established medical college in good standing, without further examination. In Illinois, Indiana, Michigan, Iowa, and perhaps some other States, the verification of the diplomas and the standing of the college granting it, was left to the judgment of the State boards. But two or three years since the Legislature of the State of Pennsylvania enacted a law creating a State Board and authorized it to grant licenses to practice on the presentation of a diploma from any one of the legally established medical colleges of that State, while all persons presenting diplomas granted by medical colleges located outside of Pennsylvania, were required to go before the Faculty of some one of the medical colleges in that State for the verification and endorsement of such diploma, before the State Medical Board could issue to them a license to practice. In plain terms, the graduate of the Medical School of Harvard, or of the Medical Department of the University of New York, or of the University of Virginia, or of any other medical school in this or other countries, outside of the Commonwealth of Pennsylvania, must fee a medical college in the latter State for a verification of his diploma

before he enters upon the practice of his profession in that State. Of course such a law could not long exist in one State without bearing fruit. Hence we find in a law enacted by the Legislature of the State of New York, bearing date June 23, 1887, the following provision: "Graduates of American colleges outside of the State of New York, and those holding licenses to practice from European governments, must have their diplomas or licenses endorsed by the Faculty of an incorporated medical college in this State (New York), or by the Regents of the University, on the recommendation of a legally constituted Board of Medical Examiners in New York. The endorser may require applicants to verify their statements under oath; and any endorsement made fraudulently, with gross carelessness or ignorance, is a misdemeanor, punishable by fine." While the law does not so state, it is understood that the applicant for an endorsement of his diploma will be charged \$25 by the endorsing college. On the other hand, the laws of Alabama, North Carolina, Virginia, and Minnesota, have established in each of those States a State Board of Medical Examiners, and require all persons proposing to commence or to continue practicing medicine in those States to be actually examined in all the branches of medicine by such examining board, without regard to any medical college diplomas whatever, and to receive a license, provided the results of the examinations prove satisfactory to the Board. Sec. 3 of the Minnesota law, that was quoted in THE JOURNAL for January 7, 1888, not only requires "All persons hereafter commencing the practice of medicine and surgery in any of its branches" in that State to submit to a thorough examination by the State Board and receive a license, but they must "present evidence of attendance on three courses of lectures of six months each." If the first two lines of this Section are to be construed literally, and apply to all practitioners coming from other States as well as to young men just entering upon practice, as claimed recently by a correspondent in that State, the last clause just quoted makes it very nearly a prohibitory statute against any of the older practitioners educated in this country, from entering upon the practice of their profession in that State, simply for the reason that prior to the last two decades there were very few medical colleges in this country giving annual courses of lectures of six months' duration. If the current methods and tendencies of medical legislation by the several States should continue, it will soon become as expensive and quite as vexatious for a practitioner to change his residence from one State to another and continue

his practice in this country, as it is for the traveller to get himself and baggage through half of the custom-houses of Europe. Sec. 3 of the Minnesota law, with two or three additions as we indicated in *THE JOURNAL* of the 7th inst., is an excellent provision to be applied to all persons just proposing to enter upon the active duties of the profession. But the facts we have mentioned above show very clearly that the profession of the whole country cannot too soon enter upon an active and persistent effort to procure more harmonious and efficient laws for the regulation of medical education and practice in all the States. And much interest will be felt in the report of the committee appointed on that subject which is expected at the coming meeting of the American Medical Association in Cincinnati.

HUMANITY IN THE DEATH SENTENCE.

It is now about a year since a State Commission was appointed in New York, to investigate and report on the most humane and practical method of carrying into effect the sentence of death. That Commission, of which MR. ELBRIDGE T. GERRY, President of the New York Society for the Prevention of Cruelty to Children, was chairman, has completed its work and has just presented to the State Legislature its report, a pamphlet of almost a hundred pages, that bears witness to the commendable zeal and industry of the Commissioners. Of the methods now in use among civilized peoples for executing criminals not one can be called humane and practical. The principal devices for this purpose are the guillotine, the garrote, and the gallows. The first two are practical but not humane, while the gallows is neither humane nor practical.

Inasmuch as it has been pretty thoroughly shown by experiment in several States, that there is no substitute for capital punishment, the deterrent effect of which is so great, it is a matter of no little importance that that punishment should be so inflicted as to do away with the objections that have been raised by sensitive and humane persons against the methods now in vogue. In doing their work the Commission seems to have been guided by the intention, as it has been expressed, of keeping the terrors and doing away with the horrors of the death penalty; and all the changes it suggests in the law have this end in view. When it was appointed it laid out a system of work that provided for the practical exhaustion of the subject. A circular was sent out, especially to judges, district attorneys, sheriffs, and physicians, soliciting views upon the present mode

of capital punishment, and asking for suggestions in regard to some more humane method than hanging, opinions being especially solicited in regard to electricity, prussic acid or other poison, the guillotine, and the garrote. About two hundred replies were received, and after a careful consideration of these, and much outside inquiry and study, the Commission decided in favor of electricity, and forfeiture of the body as well as of the life of the executed criminal.

In order to make the whole matter more intelligible, the report contains an account of the various methods of punishment employed since the Mosaic era; and the essential conclusion arrived at from this data, is that undue or peculiar severity in the mode of inflicting the death penalty, does not operate to lessen the occurrence of capital offenses. Of the present methods the guillotine is regarded as too bloody, the garrote as too barbarous, and shooting as too uncertain and revolting except in military executions. Hanging is condemned for several reasons: the possibility of resuscitation, the revolting scenes at bungled hangings, and the public feeling against the hanging of women. The Commission believes that if instantaneous and painless death could be assured, not one of these objections could be urged against the death penalty.

The Commission is satisfied that the electricity will fulfil the desired end, because medical and scientific authorities are almost entirely agreed as to its efficacy for the purpose. Resuscitation after the passage of a strong electric current through the nerve centres would be impossible, and death would be instantaneous and painless.

It is proposed that the criminal to be executed shall be placed in a chair having metallic head and foot rests connected with electrodes. If the current be supplied from electric light wires the connection could be easily made. A separate wire from an electric light plant would cost \$250 to \$500, and the chair \$50; while the cost of maintenance and operation would be merely nominal. It is recommended that electric appliances be placed in the State prisons at Sing Sing, Auburn, and Dannemora, and that all executions be made at one of these places. In this way the prompt and efficient carrying out of the death sentence would be secured in all cases, while under the present system, by which each county hangs its own criminals, an entirely inexperienced sheriff is often called upon to superintend an execution, and the risk of bungling or failure is increased if the duty be revolting or novel to him.

The Commission expresses very positive conviction

tions in regard to the time of execution and the disposition of the body of a criminal. In its opinion the prisoner should be doomed from the hour of his sentence, kept in solitary confinement, and executed without publicity on a day to be set by the prison warden, the time not to be less than four weeks and not more than eight weeks after sentence. After death the body should not be paraded like that of a hero, but should belong to the authorities for dissection or destruction, or if given to the family, the law should forbid the exhibition of it. Criminals, it is held, meet death with bravado when they contemplate elaborate descriptions of their execution in the public papers, and ostentatious funerals afterwards; and the effect of all this is to lessen the horrors of crime and of the death penalty. On the other hand, it would seem that by shutting a condemned criminal from the world at the time of his sentence, leaving him to the sternness of the law, with the knowledge that punishment was inevitable, capital crimes would become fewer. The Commission suggests that the present laws be so modified that the changes may go into effect by January 1, 1889.

THE SURGICAL TREATMENT OF PERFORATION-PERITONITIS.

In connection with the paper of Dr. Bontecou, in this issue of THE JOURNAL, may be mentioned a case published by Lücke, of Strassburg, in the *Deutsche Zeitschrift für Chirurgie*, of November 30, 1887 (Bd. 26, Hft. 5 and 6). The case was one in which the patient began to collapse suddenly after drinking a glass of cold beer. Kussmaul advised an operation, and it was done by Lücke at 8 p.m. The spray was used for a quarter of an hour before the operation, warm sublimate compresses being placed on the abdomen. Dimethylacetal-chloroform was the anæsthetic used, Lücke preferring this in all operations on the abdomen. The abdomen became somewhat relaxed under the anæsthetic, and a somewhat increased resistance was found on the right side, though there was no dulness. The incision was made in the median line below the navel, and when the peritoneum was opened a quantity of pus, mixed with flocculi of lymph, but containing no fæces, and a small quantity of gas, escaped. The portion of intestine that pressed up into the wound was markedly injected, distended, and here and there covered with fibrin-flocculi, easily washed off. A fenestrated drainage-tube carried into Douglas' sac drew off a quantity of pus, so that the whole amount of pus removed was

about 500 ccm. The ileo-cæcal region and the appendix were found free from perforation. No perforation was found anywhere. This operation was performed on April 24, 1887, and on June 17 the patient got up, having no fever, but with localized tympanites in the region of the liver. Kussmaul and Lucke agreed in the diagnosis that the perforation had taken place through a small ulcer, by which only a minimal amount of intestinal contents escaped and set up an acute purulent peritonitis. The site of the perforation was probably in a portion of the intestine in the right hypochondrium, and the perforation soon closed; but a localized peritonitis of slow development was set up, which afterwards caused pain and tympanitis. On June 22 the patient complained of renewed pain, and other symptoms followed rapidly. Soon there was dulness for 3 or 4 inches below the free border of the ribs, upwards to the fifth rib, and reaching to the middle line. The pulse was 110-118, pains in the hepatic region, and appetite less. On June 28 the temperature went up to 38.9; on the next day respiration was distressed, the dulness was as high as the fourth rib, and puncture under the border of the ribs gave pus. On June 30 an incision 5 cm. long was made parallel with the free border of the ribs on the right side, and about 3,000 ccm. of pus evacuated. Through the wound the upper diaphragmatic surface of the liver could be felt, above the costal pleura, and below the finger passed through an opening towards the abdomen, and by pressure with the other hand a quantity of pus was evacuated. A large drainage-tube was put in, and the wound dressed with iodoform gauze. It is most probable that a sacculated peritonitis had been set up on the right side, the starting-point being the seat of the former peritonitis, had penetrated the diaphragm, and ruptured into the pleural cavity. The drainage-tube was thrown out, and the wound caused so much trouble that on July 18 it was enlarged, a portion of the seventh rib was resected, and a large quantity of pus escaped. From this time the patient went on to recovery.

This was not a case of typhoid fever, but one of those apparently rare cases in which an ulcer of the intestines exists, but giving no symptoms until trauma or some other accident causes rupture. Such cases have, of course, a more favorable prognosis than cases of perforation from typhoid ulcer. But in this case there is no doubt that the patient would have died of purulent peritonitis had he not been operated on, and had the operation been postponed to give the so-called "conservative" treatment an opportunity to show—that it is anything but conservative.

That there was perforation in this case there is no doubt. But had the case come under the care of some that believe that Nature can set a broken bone, or put a Lembert's suture in an intestine perforation, or scrape out a tuberculous abscess-cavity, there would have been a labored argument, in the notes on the autopsy, to show that there was no perforation, and that an operation could have done no good. The difference between Lücke's case and one of more extensive perforation is great; but it is one rather of degree than of kind.

SOCIETY PROCEEDINGS.

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, September 17, 1887.

VICE-PRESIDENT, H. C. WHITE, M.D., IN THE CHAIR.

DR. MARY E. BATES reported a case of

UTERINE FIBROMA WITH PELVIC CELLULITIS.

A widow, 46 years old, slim and anemic, the mother of one child, had been subject to menorrhagia for several years. At intervals she had had attacks of pain in the right inguinal region which continued several days and in one instance a week. Physical examination revealed a tumor as large as a hen's egg, a movable uterus, absence of metritis and the difficult passage of a sound. Diagnosis: Interstitial fibroid at the right side of the fundus. A few days later the patient was taken with pain, nausea, profuse diaphoresis and anorexia. Diagnosis: peritonitis. Problematical and eligible causes: the presence of the tumor, the menstrual period, unusual physical exercise and the difficult passage of the sound. Improvement came on and a month later menstruation with the same symptoms again recurred. Physical examination then showed the uterus fixed in an oblique position, the bladder pushed to one side, the abdomen hyperæsthetic, the inguinal glands enlarged and tender and a "bunch" in the left inguinal region. After the menstruation ceased fluctuation appeared in the left inguinal region. There was a rise of temperature but no definite chill. Diarrhoea occurred in the place of constipation, the fluctuation and bunch in the inguinal region disappeared and pus was discharged from the vagina. Considerable improvement has since taken place.

DR. H. O. MARCY said that he had seen the patient in consultation and had agreed with Dr. Bates in the diagnosis. He was at that time fully satisfied from the history of the case that pelvic abscess was to be expected.

DR. A. P. CLARKE said that he had had a case several years ago which resembled the one reported

in many ways, in which abscess formed and death resulted from exhaustion. He thought that ergot or ergotin might be of use. In 4000 cases under the observation of Prof. Nelson 256 derived benefit from the use of ergot. Dr. Nelson believes that failure may be expected in subperitoneal cases but that the best results from the use of ergot are secured in the submucous tumors. Dr. Apostoli has showed that the diminution in size of fibroids after electrolysis is due to shock.

DR. BATES, in reply to various questions, said that the profuse menorrhagia that had been present for several years first led her to suspect a myoma. At first she had made no measurements as no tumor was suspected. Dr. Bates knew nothing so liable to cause the abscess as the tumor itself, though the patient attributed it to the passage of the sound. Ergot had been tried in this case.

DR. A. L. NORRIS said he had been much interested in the valuable paper of Dr. Bates. He remembered a case of the kind complicated with peritonitis and multiple abscesses when there was great exhaustion and a fatal termination. The patient was 32 years old and had never borne children although she had had several miscarriages with subsequent debility and chronic induration. He said he had used ergot in both submucous and interstitial fibromata several times. In two cases it was attended with marked success, not only controlling hemorrhage but abating perceptibly the growth, which after five months ceased to cause trouble. The lack of time prevented him from reviewing data, otherwise he could have narrated more cases of interest bearing upon this subject.

DR. W. SYMINGTON BROWN said that he regretted that Dr. Ephriam Cutter was not present, as he had originated the treatment of fibroids by electrolysis in 1870 and had demonstrated the decomposition of raw beef and a fibroid tumor by electricity. Dr. Cutter operated upon an extensive fibroid in a patient at Stoneham, Mass., after which operation the tumor diminished to one-half its original size and the patient was restored to health. Dr. Cutter uses a battery of six large cells which he prefers to a large number of small cells. He has cured eighteen or nineteen cases, six of which are known to Dr. Brown. Dr. Brown believed that many tumors called fibroids are not fibroids, but hæmatocœles. He considered laparotomy the true treatment for fibroids. If the patient is comfortable no operation should be done, but in a case like that of Dr. Bates laparotomy should be performed to relieve the flooding. Dr. Brown had treated two cases successfully with Squibbs' ext. ergot, fl.

DR. F. L. BURT believed that many failures in the use of ergot were due to the poor quality of that drug. He has sometimes used it by saturating cotton and applying it to the vagina.

DR. H. C. WHITE considered the mouth the best and most natural way to give ergot. He has at present a case of fibroid where the patient measures 48 inches about the umbilicus and the tumor is supposed to weigh 20 pounds. Only one of many consultants advised removal. Ergot controlled the flooding and at present the patient has passed the menopause.

Stated Meeting, October 13, 1887.

DR. WILLIAM G. WHEELER IN THE CHAIR.

DR. A. P. CLARKE read a paper entitled,

A CASE IN WHICH ABORTION WAS INDUCED TO RELIEVE
UNCONTROLLABLE VOMITING OF PREGNANCY.

(See p. 40, JOURNAL of January 14, 1888.)

DR. J. F. FRISBIE described a case that had fallen under his observation. A young Prince Edward's Island woman became pregnant soon after marriage and suffered from severe nausea and vomiting for six weeks, at the end of which time vomiting was checked. Pregnancy went to full term and a healthy child was born which died some months later. The following year the mother again became pregnant. Vomiting soon appeared which defied all measures for its relief. The mother was reduced to a skeleton and was confined at eight and a half months. The child weighed but 4 pounds and consisted of but little more than skin and bones. The mother lived but has never been well since. Dr. Frisbie was of the opinion that the interests of both child and mother might have been best subserved by the induction of abortion at an early period in the pregnancy.

DR. CLARKE in reply to Dr. Mary Bates as to whether there were any casts in the urine of the patient said that there were none at any time but that the urine was heavily loaded with urates.

DR. BATES described a case of a patient who sought her advice for chronic metritis. At that time there were no casts in her urine. She subsequently became pregnant and passed out of Dr. Bates' care. At a later date Dr. Bates was called to see her in consultation, and found that she had been ill for seven months, and had been vomiting constantly for four weeks. The patient was evidently in a critical condition and Dr. B. advised the induction of abortion, but this advice was not accepted by the attendant. In one hour convulsions set in and death occurred at the end of three hours. The urine was found to be one-half albumen and to contain abundant old casts. At the autopsy urea was found in the stomach; it had also been deposited in the cerebellum. Dr. Bates wished to ask the opinion of the members of the Society as to what would have been the proper course of treatment in this case; whether it would have been best to have given pilocarpine and used active means to relieve the kidneys, or to have at once induced abortion?

DR. L. F. WARNER said that he did not regard the cases described by Dr. Bates and Dr. Clarke as at all parallel. The vomiting in Dr. Bates' case was probably uræmic in its nature and not what is usually known as the vomiting of pregnancy. It was not the direct result of the pregnancy but was one of the indirect effects of that condition, probably pressure on the kidneys or on the blood-vessels belonging to them. In such a case there are other and better means of relieving the kidneys than the induction of abortion.

DR. I. W. STAREIRD, in referring to the case described by Dr. Bates, said that in such a case he would first use heroic measures to relieve the system

by assisting in the elimination of the urea which was causing the trouble. The use of the steam bath and active cathartics are the best and quickest means of accomplishing that end. If these measures fail premature delivery should be resorted to.

DR. C. W. STEVENS mentioned a case that had been under his care recently. The patient was a lady of 37 years, and married for the second time. She had been pregnant three months, during the last six weeks of which time vomiting had been excessive. She was confined to the bed and fainting followed any effort to rise. Her prostration was extreme. The induction of abortion was decided on as a last resort, and it was accomplished by the use of a bougie. A fetus 3 or 4 inches long was expelled; no hæmorrhage followed and recovery was rapid and complete.

DR. L. F. WARNER described a case that he saw at the fifth month of pregnancy. The patient was in a wretched condition and vomited everything. There was a jaundiced condition of the whole body. Small doses of calomel, ipecac and hyoscyamus were used. The patient was directed to eat all she wished and if that was rejected to eat more. She was soon able to retain her food for a period of time which gradually lengthened. In a month she could retain her food two hours, and in the end she made a good recovery. In such cases it is necessary to start up a healthy action of the liver. When this end is gained the progress toward recovery is sure. Dr. Warner said that he had never induced abortion in such cases and he had never lost a case.

DR. HELEN WEBSTER recalled a case that she had lost fifteen or sixteen years ago. The patient was of neurotic tendency; suffered much from neuralgia and was in a bad state generally. She had aborted once previously. She again became pregnant and vomiting was frequent and severe. She became extremely emaciated and the skin assumed a yellow color. Abortion was suggested and advised but the consulting physician advised against it. The patient gradually sank and died. She aborted two days before death. During the last forty-eight hours she was delirious and counted 1, 2, 3, 4, incessantly. In a similar case Dr. Webster would now induce an abortion.

DR. F. L. BURT believed that abortion was sometimes done in these cases where milder measures would be successful. He also believed that active interference was often delayed until too late a period to be of any avail. Medicinal means should be tried long and faithfully, but when time has demonstrated their uselessness more radical measures should be at once used.

DR. W. S. BROWN said that Dr. Warner had introduced an important distinction in these cases of persistent vomiting. The first question to be settled in these cases is, Is the vomiting due to the pregnancy or to some other morbid condition? Dr. B. had learned to pay particular attention to the liver and had made frequent use of the hepatic pill, so called. Much of the dissatisfaction from the use of calomel has arisen from an unintentional adulteration of the drug with the corrosive chloride. This results from its

not having been thoroughly washed during the process of manufacture. Pure calomel is one of the safest forms of mercury which we have at our command, but its adulteration with the corrosive chloride has given rise to most of the accidents which have brought discredit upon the drug. If Dr. Clarke made any mistake in the case reported it was in waiting too long before interfering. When mild remedial measures fail it is a mistake to delay. The principal reason why the Caesarian section is so often fatal in this country is that the operation is generally delayed until the patient is moribund. This operation ought to be nearly as successful as ovariectomy if it was performed under favorable circumstances. As a rule the operation of tracheotomy is delayed too long to offer any chance of recovery. In inducing and abortion Dr. Brown has abandoned the use of the bougie. He now dilates the neck of the womb by the use of a tent the sides of which have been protected by pieces of slippery-elm bark. When dilatation has in this way been begun he uses a dilator and rapidly opens the neck to the required size. The advantage of this procedure is that you can thus deliver both fetus and placenta without delay.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, November 21, 1887.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

DR. L. L. McARTHUR read a paper on

THE PRESENT STATE OF TETANUS.

Tetanus is divided into acute, subacute and chronic. Every case of tetanus has, as a primary factor, a traumatism which may be no more than the prick of a hypodermic needle or may be the crushing of a limb. Blacks are said to be more liable to tetanus than whites. The occupation must also be taken into consideration, hostlers, gardeners, etc., being especially susceptible to the disease. It is claimed that tetanus is always infectious and never spontaneous. The case was mentioned of a New York surgeon, who, when making a post-mortem examination of a horse that had died of tetanus, accidentally scratched his finger, and shortly after died of the same disease. Experiments have been made by which a microorganism cultivated from garden soil and introduced under the skin of animals, produced tetanus, and muscular tissue obtained from a case of tetanus introduced under the skin of lower animals reproduced the disease. Out of 16,000 cases of foot injuries during the War of the Rebellion, fifty-seven resulted in tetanus. In 12,000 hand injuries not a single case of tetanus was reported. In the acute stage the termination is always fatal by the end of the fourth day from spasm of the larynx or heart failure. In the subacute, there are 50 per cent. of recoveries. The chronic form terminates favorably in from thirty to sixty days. In the treatment nervous sedatives, combined with ab-

solute quiet and rest, yield the best results. The bromides and opium seem to have the most beneficial effect.

DR. A. E. HOADLEY: I have been very much interested in this paper, and while I am not prepared to contribute anything in the way of theory as to the pathology or etiology of this disease, I am surprised to see how few cases have been cited, but seventy-seven having been collected; then again, I am surprised to learn that fifty four out of the seventy-seven recovered. It is probable that this is a very small percentage of the whole number; it seems to me that it is a common disease. I have had ten cases of traumatic and four cases of infantile tetanus in my practice.

DR. N. P. PEARSON: Yesterday I received a medical paper from Copenhagen, in which I saw a report of a case of infantile trismus. They have found bacteria there. They took a part of the navel and produced infection from it; they infected mice and guinea pigs, and they died immediately of tetanus.

DR. FRANK BILLINGS: It may be interesting to cite two or three cases that have come under my observation, especially as to the treatment. While in Cook County Hospital, there were, I remember, two cases of especial interest to me: One was a man about 30 years of age, who had received an inoculating wound from a pitch-fork, through the foot, passing downward from the dorsum. He did not come to the hospital until trismus had commenced. The wound in the foot was suppurating then, and Dr. Meacher, of Portage, Wis., who was house surgeon, opened up the local wound and dressed it antiseptically. Tetanus developed, and on the third day after he entered the hospital the sciatic nerve of that side was stretched. It did not have a good influence, and three days afterwards the crural nerves were stretched, and after that the sciatic nerves were again stretched, without marked effect good or bad. At the same time he was put upon morphine and chloral, afterwards he was given the treatment recommended by Dr. Gunn—hypodermic injections of physostigma. We began with $\frac{1}{8}$ of a grain repeated every three hours, and gradually increased the amount until the man took 3 grains every dose, of the stock which was in the hospital, without a perceptible effect. The stock giving out, a new supply was obtained, and the nurse went on giving 3 grains of the new supply. I was called suddenly to see the man, and found him with all the characteristic symptoms of physostigma poisoning—pin-point pupils, and rapid, weak pulse, oedema of the lungs with rapid superficial breathing. I gave the usual antidotes, atropine and digitalis, and he soon recovered; the first thing he did was to assume the tetanus position—opisthotonos. He eventually recovered, but he never regained his strength of mind—he was simple, had a peculiar laugh, and talked a great deal; before he had been a silent man, but he became very garrulous and was the clown of the ward. He disappeared from the hospital and I lost sight of him. Another case of interest occurred while I was house surgeon: A man was brought to the hospital with a simple fracture of one tibia; in

two weeks trismus suddenly developed after a chill. On examining the man, I detected fluctuation over the seat of fracture and the bones were freely movable. Dr. Isham was the attending surgeon. We made a compound fracture of it and drained the wound thoroughly, and although the trismus remained for several days, the man ultimately recovered, with perfect union of the bones. Another case—which is not of special medical interest—was a boy who received a crushing injury of one leg. I amputated the leg in its upper third, the flaps united very well, but about the seventh day he was taken with a chill, and trismus commenced, and then tetanus developed. The friends of the boy consented to have the sciatic nerve stretched, but when we attempted to have it done—had the boy carried into the operating room, the warden and chairman of the hospital committee interfered and commanded us to take the boy back; as a result, the old medical board stepped out of the County Hospital. We afterwards stretched the nerve and the boy recovered—making three recoveries from tetanus during my service in the hospital. Several other cases of tetanus occurred from 4th of July pistol wounds, and death followed in every one. The temperature just before and after the death was the same as in all hydrophobic patients—it rose toward death, and my thermometer, which registers 110° F., would not register it.

DR. J. A. ROBISON: Last summer, during my service in the County Hospital, there was a case of tetanus developed in my ward. The man was brought in May, with what was supposed to be cerebral meningitis; he had a high temperature, face flushed and of a purple hue. He was easily excited, and in a day or two we noticed symptoms of tetanus; trismus and ophisthotonos occurring during the progress of the case. During the January previous, he had received a wound from a buzz saw in the second and third fingers of the right hand. He was sent to the surgical side and these fingers were amputated. For several days it was a question whether or not he would recover, but he finally did recover, and the last I saw of him he was walking about the ward, although he was insane. I think the amputation probably saved his life, because these fingers were undoubtedly a source of irritation, as he would have tetanic spasms only when these fingers were touched. This would seem to indicate that it is possible that old wounds act as an exciting cause of tetanus.

DR. L. L. MCARTHUR: In regard to the frequency of recoveries in the cases reported, of fifty-four out of seventy-seven, I would say that it is probable that the cases which terminate successfully find their way into the medical journals, while those that terminate fatally are not so frequently published, and this will explain the apparent excess of cures over deaths. To say that the disease is a frequent one I think is a mistake—it is one of the rare diseases; although one sees it occasionally in practice. During the entire war there were reported 28,000 wounds of the hands and feet, and of these only fifty-seven resulted in tetanus (*i.e.* 1.2 of 1 per

cent.), thus showing that the disease is not very frequent. I am glad to learn that tetanus has been proven to be of an infective nature, because this offers the best explanation of the causation of this disease that has yet been given. Several eminent authorities have defined tetanus as a disease of uncleanliness, which would rather point toward its infectious character. In the case reported by Dr. Robison, he admits that there was a meningeal doubt in the case, and I think in many cases of so-called tetanus, investigation would prove them to belong to a different class of nervous diseases. One point I think well worthy of emphasis, that is the continuance of the treatment long after all the symptoms of tetanus have disappeared, and I very much regret, in the last case which I had, that I diminished the amount of medicine that the man was taking, during an apparent improvement in the course of the disease. Several French authorities also urge this point.

DR. W. T. BELFIELD reported a case of

NEPHRO-LITHOTOMY.

JAMES F., 37 years old, gives the following history: Some fifteen years ago he suffered for several months from great irritability of the bladder, urinating very frequently and with considerable pain. On several occasions he passed blood. Was treated at that time for "cystitis." These symptoms gradually disappeared; at intervals thereafter he suffered from dull pain in the loins, often extending upward to the chest and sometimes incapacitating him for work. For the past two years pus had been seen in the urine constantly in varying quantity. At times the amount would be small for a few days, during which time the pain in the side became severe, then a large quantity of pus would be discharged while the pain diminished. After treatment for various complaints he came, about a year ago, under the care of Dr. Frank Billings, who discovered an increased area of dullness over the left kidney, and at times a distinct, though slight, swelling in the loin. Recognizing that the left kidney was the seat of suppuration, Dr. Billings endeavored to ascertain the cause thereof. Tuberculosis was almost certainly excluded by repeated examinations of the pus for the characteristic bacilli, with negative result. As renal calculus seemed the most probable diagnosis, Dr. Billings referred the patient to me for operation. After thorough examination and observation this seemed to me also the most plausible diagnosis, though many of the acute symptoms of calculus did not then exist. The right kidney could be felt through the abdominal walls and seemed normal, but previous to the operation, I endeavored to demonstrate its integrity by closing the ureter of the one under suspicion, by means of Silbermann's catheter. The instrument caused so much pain, however, that the result was unsatisfactory. June 26 last, in the presence of Drs. Billings, Hosmer and Tilley, I explored the left kidney through an oblique lumbar incision. The organ was found to be enlarged and flabby. Upon incising the cortex an explanation of this condition was found in hydro-nephrosis, only a shell of

the renal tissue half an inch thick, remaining. The cause of hydro nephrosis was found in a calculus of conical shape some two inches in length, its smaller end impacted in the ureter so tightly as to require some force for its extraction. A few loose flakes were afterwards removed from the pelvis and ureter. Recovery ensued without notable event. On the fourteenth day the patient visited his place of business. In two months his weight increased from 105 to 123 pounds, and all morbid symptoms had disappeared except that some pus was still present in the urine. Latterly this has become so slight in amount as to be discoverable only with a microscope. Presumably the shriveling of the distended kidney is about accomplished. The stone is an oxalate or mulberry calculus, and weighed 224 grains.

DR. BELFIELD also reported a case of

CANCER OF THE PROSTATE.

Hans J., aged 48 years, was admitted to the County Hospital, suffering from unduly frequent and somewhat painful urination. Symptoms which had existed for some three months. On two occasions blood had been observed in the urine. Examination *per rectum* showed a slightly enlarged, though symmetrical prostate, along the centre of which, instead of the normal depression, was a slight protuberance. By the microscope we found in the urine a few blood corpuscles. A tumor of the prostate, either epitheliomatous or malignant was diagnosed. The latter seemed more probable because the quantity of blood in the urine was altogether too slight for the benign variety. Efforts to entangle and bring away shreds of the supposed growth in the eye of a metallic catheter, failed. May 7, the bladder was explored by supra-pubic incision, and malignant villous growth was found growing over the left side of the prostate, the villi projecting an inch or more into the bladder. These were removed with forceps and spoon and the base cauterized. Recovery ensued without notable event, and for eight weeks the renal function seemed almost normal, then the former symptoms began again and steadily increased in severity. The growth finally entirely filled the bladder and involved the abdominal wall, producing a small fistulous opening, and constituting a tumor which could be plainly outlined above the symphysis and though the rectum, apparently filling the pelvis. Death occurred October 8. Only the glands in the immediate vicinity of the bladder were found to be carcinomatous and no secondary growths in other organs were discovered.

DR. ELBERT WING: There is a point in regard to the exclusion of tuberculosis by the examination mentioned, that is perhaps of interest in this connection. A gentleman who served for two years as interne at Tübingen, told me that they had a case there which they thought was tuberculosis of the renal tract, and that they made between sixty and seventy very careful examinations of the sediment of the urine for the bacilli of tuberculosis, but found none. At the autopsy they found tubercular ulcers in the kidneys, both ureters, bladder and urethra.

DR. ELBERT WING exhibited a specimen from a case of

TYPHOID FEVER.

I have here some fresh pathological specimens obtained at the County Hospital to-day. The first is a portion of the intestine of a man that died of typhoid fever. It shows the swelling and tumefaction of the glands very nicely. There are also a few ulcers. There is a point of interest about the case aside from the typhoid fever, which was the involvement of the respirations; averaging between 40 and 60; pulse 120, temperature 101°. When the case came to the post mortem table the lungs were found to be quite extensively cedematous.

DR. WING also exhibited specimens of a case of CIRRHOSIS OF THE LIVER WITH MARKED ASCITES.

The man had been tapped a number of times and finally died in the hospital from edema of the lungs. He also had a scrotal hernia, and in addition to that there was an hydrocele of the same side. The omentum was attached to the anterior surface of the sac perhaps two inches from the external ring, and throughout the omentum there are wide bands of connective tissue which have formed through chronic passive hyperemia. All of the connective tissue about the liver was in a similar condition. The hydrocele was the size of a goose egg, and has been incised. The testicle is perhaps one-third smaller than one would expect to find it. The organ of principal interest, however, is the liver. All that need be said about the history of the case, is that the man enjoyed the sobriquet of "Champagne Charlie." It is as handsome a specimen of gin drinker's liver as one ever sees. One can see the little projecting islands of tissue, which are almost small enough to give the surface of the liver the appearance of granulation tissue. By way of emphasis of the difference between this kind of cirrhosis and the so-called biliary cirrhosis, of which there is not as yet much definitely known by the profession at large, I have taken the trouble to bring some slides of this and of biliary cirrhosis. They demonstrate very beautifully the difference in the way in which the connective tissue is distributed throughout the organs. In diffuse cirrhosis it is peripheral to the lobule, and surrounds nearly all of the lobules in any given field, but the connective tissue in biliary cirrhosis shows itself first around the gall ducts as little circumscribed islands clearly defined. There seem to be two forms of biliary cirrhosis, one with and one without hypertrophy of the liver. The former usually occurring as an acute disease in cases of hard drinkers.

CINCINNATI MEDICAL SOCIETY.

Stated Meeting, January 3, 1888.

THE PRESIDENT, C. P. JUDKINS, M.D., IN THE CHAIR.

DR. RUFUS B. HALL, of Chillicothe, Ohio, reported
A CASE OF PYOSALPINX, WITH SPECIMENS.

The specimens consisted of the right and left ovaries and tubes. The left tube was dilated to the

size of a small orange which had contained pus. The right tube was enlarged but contained no purulent matter. There were shreds of tissue adhering to every part of the tubes and ovaries, showing plainly that they had been firmly adherent before removal. The patient, Mrs. C. A., aged 41, had always been a strong healthy woman until after her third confinement, which occurred Dec. 14, 1876, after which she had a severe attack of peritonitis. After the subsidence of the peritonitis she continued to suffer severe pain in the left inguinal region which was so severe as to require the continuous use of morphia for three or four months. She had menorrhagia which continued without interruption from the birth of her child until the following November, notwithstanding the fact that she was receiving treatment from her physician all that time. The treatment was continued without interruption until 1880. Finding that the pain remained the same in spite of all treatment it was discontinued until 1883, when she consulted Dr. O. C. Andre, of Piquette, Ohio. He found the uterus retroflexed and fixed, and very sensitive to pressure. At that time she was totally disabled from overseeing her domestic duties on account of the pain in the left side, which had continued since the attack of peritonitis. The pain was much worse for seven or eight days before each menstrual period. The flow continued for ten days and was so excessive as to amount to severe flooding. For two years previous to the operation she suffered much pain in the right ovarian region. The pain was constant and growing worse with each recurrent menstrual period; this added to her already great suffering, and the dread that it would be as severe as that on the left side, so preyed upon her mind as to cause her to become despondent. Intercourse was painful, and the pelvic pain was much increased for days after it. By vaginal examination the uterus was found retroflexed and immovably fixed by adhesions. To the left of the uterus there was a mass the size of a small orange that was excessively sensitive to pressure; there was also great tenderness to the right of the uterus but no lump could be detected by vaginal touch. She had submitted to all manner of treatment, local and constitutional, without receiving any benefit. She continued to suffer, and much of the time was confined to her bed, and was never one hour without the pain in her left side from the attack of peritonitis in 1876 until after the operation was performed.

She was operated upon Nov. 16, 1887. The pelvic organs were so matted and glued together as to require much force to separate the adhesions. The pyosalpinx burst and spilled its contents into the abdominal cavity. The uterus was liberated from the old adhesions in the cul de sac, and a glass drainage tube inserted. On the third day after the operation the temperature reached 100.5°, the highest point. Patient was permitted to leave her bed on the eighteenth day, and to go home on the twenty-seventh, entirely relieved of her pain. The uterus occupied the normal position in the pelvis and was as movable as that of a healthy woman. She recovered without a bad symptom.

The case has many points of interest connected with its history.

1. That in all cases of pelvic pain coming on after puerperal or gonorrhoeal inflammation which remains for months after the acute inflammation has subsided, and where it is clear that the cause of the pain is not located in the uterus itself; we are to suspect salpingitis and local treatment utterly fails to effect a cure.

2. The retroflexion is a natural result following the repeated attacks of inflammation and cannot be cured by any local applications made to the uterus. The use of pessaries aggravate the pelvic pain and are dangerous, as likely to produce an acute attack of peritonitis that may cause the death of the patient.

3. That she was 41 years of age would constitute a weighty objection to the operation could one with certainty say that no pyosalpinx existed. But as in this case, where the patient has suffered so many years of constant pain, we are justified in giving her the benefit of an operation, and in the great majority of cases we shall find that we have pursued the proper course. If we had deferred the operation until she had passed the menopause she would have continued to suffer on, or to submit to an operation for the removal of the pyosalpinx.

DR. C. A. L. REED said: I am induced to say something on this paper, although I may state in advance that criticism must exhaust itself in commendation. The history of the case shows that it went for eleven years without a proper diagnosis being made. This fact illustrates a deplorable state of affairs so far as the general profession is concerned; and I cannot refrain from presenting the indictment, that physicians are as a rule too indifferent to the diagnostic points of tubal disease. These cases are not hard to diagnose, and there are but few physicians who could not diagnose them if they would. But the rule is, as illustrated by this case, these patients go along for years, to come finally to the surgeon's table for an operation that has become seriously complicated through delay.

THE PRESIDENT asked whether it would have been advisable to have operated in the early stages of the disease, or whether it was not better to have waited in hopes of improvement.

DR. REED thought it would have been better practice to have operated early, before the complications had developed. It may be laid down as a rule, that cases of pyosalpinx should be operated upon so soon as the diagnosis could be made, for experience has taught that there is no other way of affording relief. Mr. Lawson Tait said that while assistant to Simpson, he saw many cases that were diagnosed as uterine displacements that he now believes were cases of pyosalpinx.

DR. OLIVER said that there was one point in the history of the case that impressed him very strongly, and that was the fact that although this woman had suffered intense pain for a period of eleven years, during which time she had practically been bed-ridden, yet her nutrition was not impaired, nor did her general health suffer to any extent. This was evidenced by the fact that her weight at the time of the

operation was about the same as when in good health. This well illustrates the idea that the Fallopian tubes are not of very much importance, physiologically speaking; pathologically they seem to be of considerable importance, so far as the woman's comfort and piece of mind are concerned. He asked whether it would have been advisable to operate upon this case early in its course.

DR. HALL said, in reply to Dr. Oliver's question, that he would operate just so soon as he was able to diagnose a distended tube, and that he was indifferent to the cause of such distension. The treatment would be the same no matter whether it was hæmato-, hydro-, or pyosalpinx

GERMAN MEDICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, December 12, 1887.

THE PRESIDENT IN THE CHAIR.

DR. LAWRENCE WOLFF read a paper on
PTOMAINES.

He first referred to the long known toxic effects of decaying cadavers, but how their toxic effect was attributed to a poison rather than the transmission of a special micro-organism creating a poison in the new soil. He quotes the work of Pasteur and others and their effects upon medicine. He argues for the specific action of the microbe from the fact that albuminoids can be preserved indefinitely if protected from them, reasoning that the organized body after death does not bear within itself the means of destruction or decomposition. He states that other basic substances generated during life, such as the vegetable alkaloids, have great similarity with the cadaveric bases developing through the influence of bacteria, dwelling on the definite relations necessary between agency and soil to develop certain products. He considers the action of bacteria a chemical one, in consequence of which the complex molecule is split up into simpler ones. He admits the albumenoids, or rather parts thereof at the necessary pabulum of the microbe but denies the excretory character of the ptomaine, which he holds to be simply by-products of the decomposition. He quotes at length the history and development of our knowledge of the ptomaines, accords to Dupre and Bence Jones the priority of the discovery in the animal cholinoidine. Sonnenchein and Sulzer next produced ptomaines resembling atropine and hyoscyamine, while Rorsh and Fassender next separated a base giving some digitalin reactions. Schwanert also isolated a ptomaine. He then reaches the labors of Francesco Selmi and his work in various poison cases. Liebermann next furnished a conine-like ptomaine as did Brouardel and Boutmy who claimed for the ptomaines the general reaction of reducing potassium ferri cyanide, which was soon proven fallacious. After again referring to the vast labors of Selmi he proceeds to the consideration of pathological ptomaines. He

claims by analogy that as the action of alkaloids is proportionate to their chemical structure, so ptomaines must be, and as special micro-organisms produce specific bases, he argues that the type and course of infectious diseases could in this way be explained. Thus, he says, pathology has fallen an heirloom to the chemist as predicted by the late Austin Flint. He lays stress on the physiological experiments with ptomaines and contends, once the specific poisons of disease known, the antidote will arise from their physiological action. He refers to Nencki as the first who furnished pure ptomaines, and then to the exhaustive labors of Brieger, the poisonous action of peptones shown by him and the consideration of the conditions favoring the development of ptomaines. Thus from lecithine Brieger claims choline, neurine and neuridine formed. He shows the development of a number of diamines called respectively cadaverine, putrescine and saprine, while mydeline he found the most poisonous and having mydriatic properties. Brieger shows these to belong to the ethylene series and not to the pyridines and not responding to the reduction test. Villiers separated the cholera ptomaine from the intestines, of a trimethylamine odor acting on the nervous system and heart of animals. He also isolated a pneumonia ptomaine which he holds identical with that of diphtheria. The writer then quotes the labors of Gautier, who isolated parvoline and hydro-collidine and others, as well as leukomaines from living tissues, and claims the classification of ptomaines with alkaloids, but thinks ptomaines destroyed in the body by oxydation, as not found in the urine. Brieger in his latest researches describes as ptomaine a poisonous amidic acid, also midatoxine and methyl guanidine. This investigator also experimented with pathogenic bacteria in cultures and claims that while the staphylococcus pyogenes aureus produces only ammonium chloride the streptococcus produces besides this trimethylamine. From cultures of the typhus bacillus he obtained triphthoxine; from tetanous ferment another giving physiological symptoms as the cultures. The author of the paper then quotes the tyrotoxin of Vaughan and lays stress on its importance both as a forensic ptomaine as well as one pathogenic of cholera infantum. He then gives a *resume* of his paper, dwelling on the generally transient character of the ptomaines and their instability. He speaks of the difficulty and complexity of their chemistry and calls attention to the danger of new productions in the process of isolation, but principally of the danger in his opinion of reducing their complex molecules into simpler ones during their purification. He disclaims the relative value of their development from cultures and says their absence from the urine where alkaloids are found is no proof of their non-existence or oxydation. The principal point is in calling attention to the volatility of ptomaines in their basic state and the probability of their excretion by the respiratory apparatus, which is clinically borne out by the specific odor of diseases, and physiologically by the well known poisonous exhalations of ammoniacal compounds. He claims that the true pathological ptomaines will be found in the pulmonary exhalations,

and states that he is engaged on experiments with a view to test his theory.

DR. WEED related a case of sausage poisoning, in which the well-known symptom of gastro-intestinal irritation quickly followed the ingestion of the food, but disappeared on the second day. On the ninth day, an attack simulating cerebro-spinal fever appeared with headache, vomiting, retraction of the neck, delirium, spastic contractions on irritation of all the voluntary muscles, acetoneuria, and death by failure of respiration. The post-mortem revealed only hyperemia of the cerebro-spinal meninges. Now, in considering this case, the primary gastro-intestinal phenomena are readily understood to be those of local irritation. But those appearing after nine days, do they speak for a late intoxication, or for an infection after a period of incubation? Is there any known ptomaine which introduced into the gastro-intestinal canal would be so gradually absorbed, and so slowly eliminated, as to exhibit accumulative action at the end of so long a period?

DR. FORMAD called attention to the fact that cadaveric poisons are volatile, so that the danger from dissecting wounds diminishes from day to day after death. Virchow and von Recklinghausen advise waiting until the third or fourth day with the autopsy in all cases of infectious disease. And even healthy tissue, as in sudden death from accident, or taken from the living animal, is highly poisonous if introduced under the skin. So too is the saliva, of which the serpent virus is but a specialization.

Another reason for delay, is the fact that the less dangerous bacteria of putrefaction will ultimately crowd out the specific bacteria of the disease. He confirms Dr. Wolff's statement that oxygen is necessary for the development of the bacteria—his investigations made in conjunction with Professor Vaughan upon the bacteria of diphtheria in milk, having illustrated this fact. In his opinion, bacteriology has as yet offered nothing absolute in the diagnosis of disease, except in the cases of anthrax, tuberculosis and relapsing fever; and he hopes that chemistry will, in the near future, give us the pathognomonic principles of disease.

DR. MAYNARD said: It is not true that all animal poisons are the products of the development of microorganisms, and cited as instances the toxic effect of saliva, its analogue the serpent venom, and even the physiological peptones, when introduced under the skin. So too papain, of vegetable origin, in which no bacteriological agency is claimed, is identical in its effect with the rattlesnake poison. Could not therefore certain cases of ptomainemia be due simply to the presence of physiological materials in the wrong place—as for example, the hydrated albuminoids in the circulation? The poison in Dr. Weed's case was probably the "Wurst-Gift" of Brieger, analogous in its effects to curare.

DR. WISE called attention to the fact, that certain savage nations live almost exclusively on the meat of animals which died of a natural death, and whose meat is partially decayed—such as the nomadic Arabs and the Norwegian fisherman—without experiencing any ill effects.

DR. MILLER emphasized the element of susceptibility in the production of the phenomena of ptomaine poisoning, and cited cases, one of tyrotoxin and one of post-mortem poison, in which only certain individuals experienced ill effects.

DR. ROSENTHAL called attention to the fact, that in the cases of ergotized rye and fish-pickle, vegetable and animal tissues furnish identical poisons, viz.: propylamine and trimethylamine.

DR. SEILER in reply to Dr. Wise, said that immunity results from the habitual introduction of toxic elements into the system, as in the case of the poison of insects. He questioned whether the endemic leprosy among the Norwegian fisherman, might not be, in part, due to the very habit cited.

DR. COLLINS expressed his belief that ptomaines are constantly produced in the body, and that auto-infection is prevented by the simultaneous production of antagonistic ones.

DR. WOLFF in closing the discussion, said that in Dr. Weed's case the primary phenomena were due to direct irritation, while the later symptoms were of bacterial origin. There is a remarkable resemblance between ptomainemia and curare-poisoning. As we are ignorant of the mode of preparing this drug, who knows but what decayed animal tissue may be one of its ingredients? In reply to Dr. Wise's remarks, he called attention to the fact, that cooking decayed meat, would drive off the volatile ptomaines, and kill the bacteria; and that when such food is taken raw, the process of digestion effects the same result.

FOREIGN CORRESPONDENCE

LETTER FROM VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Phosphate of Lime in Laryngeal Tuberculosis—Sublimite Fossil meal in Abdominal Actinomycosis Hominis—Syphilitic Myositis—Cocaine in Ophthalmic Surgery—Professor von Langer.

In two of the recent numbers of the *Internationale Klinische Rundschau*, Prof. John Schnitzler gives some interesting details of a lecture on the treatment of tuberculosis of the larynx with the phosphate of lime, which he had delivered in the Section of Laryngology and Rhinology of the sixtieth meeting of German scientists and physicians at Wiesbaden. He first availed himself of the acid solution of the phosphate of lime, as recommended by Drs. Freund and Kolischer, of Vienna, but later on he used phosphoric acid in different degrees of concentration, and at last, the pure and non diluted acid was used. He applied the solution of Freund and Kolischer by means of the brush or the syringe, and proceeded quite in the same way when he availed himself of the pure phosphoric acid. The patients stated that they had a burning and prickly sensation after the application, which varied according to the intensity of the brushings or the injections. In some cases severe pains supervened, and sometimes also spasms of the rima

glottidis were produced. On the laryngoscopic examination an increased hyperæmia of the respective mucous membrane was observed, and only on energetic application a grey-white scurf could be noticed which, in most of cases, soon disappeared again. In superficial, and occasionally also in deep ulcerations, these became cleaned in this course of treatment, and sometimes also fresh granulations were observed, which led to a temporary recovery; no permanent cure or that of a long duration could, however, be obtained in this way. The same was also true of the treatment with gauze which had been saturated with the solution of the phosphate of lime.

Prof. Schnitzler then changed the method under consideration in such a way that he availed himself of the phosphate of lime in the form of a powder, instead of the solution which had been recommended by Dr. Kollischer. The idea which led the lecturer to adopt this procedure was the fact that powders which had not at all any antiseptic or specific quality nevertheless favorably influenced the ulcerative process by forming a protecting layer on the ulcerations, and this so much the more when, owing to their chemical composition, they have the quality of diminishing the secretion, a quality which was always stated as being characteristic for the lime preparations. The way in which the powder of the phosphate of lime was used was the following: Before the powder is applied to the larynx the mucous membrane must be washed, and the erosions and ulcerations must be cleaned, the adhering muco-purulent layers being removed. For this purpose the inhalations of chloride of potassium and chloride of sodium, as well as the solutions of salicylic and boric acid, can be most advantageously availed of. The inflations with the powder of the phosphate of lime are then made, and in such a way that the whole mucous membrane, and especially the diseased parts of the larynx, are quite covered with the powder. After it had become evident that in this way of the administration of the phosphate of lime the secretion not only diminished and the swelling decreased, but that also a tendency towards recovery of the ulcerations could be noticed, also other remedies which might exert a good influence on the laryngeal phthisis were added to the phosphate of lime, and after repeated trials, the following formula of a powder which had been used in numerous cases with good success was attained:

R. Cocaini mur.....	0.2 (grams).
Calci phosphor.....	10.0.
Ol. menth. piper.....	gtts. v.

The results that had been obtained with the inflations with this powder consisted, first, in a cool sensation in the throat, a diminution in the irritability and a decrease in the pains; when the treatment was continued for a longer time, a diminution in the secretion and a decrease in the swelling of the mucous membrane; and finally—at last in some cases in which the process had not much advanced—an evident tendency towards recovery could be noticed.

Prof. Schnitzler remarks at the end of his communication that, in spite of these not very considerable results, he would nevertheless recommend the use of the phosphate of lime in the now mentioned way.

Though this remedy had no specific influence on the tubercular process, relief and, under favorable conditions, also recovery was obtained in several cases, and at any case this was an excellent remedy in all catarrhal affections of the upper air passages.

At a recent meeting of the Imperial Royal Society of Physicians of this city, Dr. Ullmann, Prof. Albert's assistant, brought forward a case of abdominal actinomycosis which had been successfully treated in Prof. Albert's clinic by means of the application of a dress of sublimate fossil-meal (Sublimat Kieselgühr, viz.: a paste which is prepared with sublimate and silicious earth). The patient presented a solid tumor of a violet color in the right hypochondriac region, and on the examination of the patient at Prof. Albert's clinic, one discovered a fistula in the abdominal region which went as far as the bladder, and from which pus discharged on pressure. The microscopical examination of the pus proved the presence of the actinomycosis granules which were characteristic of the disease under consideration. The diagnosis of actinomycosis of the abdominal walls could already be made after the external appearance of the hypochondriac tumor, as such cases had already repeatedly been observed at that clinic. After convenient operation, a dress of sublimate fossil-meal (containing 10 per mille sublimate) was applied to the wound, and the patient could be dismissed from the hospital as cured after four weeks. As to the conditions of the pus in cases of actinomycosis, Dr. Ullmann remarked that, on repeated examinations, he had also met with other microorganisms, such as "staphylococci" and "streptococci," and he was of the opinion that the suppurating process was caused by these fungi, and that the actinomycetes created only a *locus minoris resistentiæ*.

Prof. Neumann recently communicated to the same Society some valuable details concerning myositis syphilitica. He inquired into the cause of those intense pains in the rectum which supervened in the form of spasmodic muscular contractions even when the rectal mucous membrane which had before been affected with syphilis was quite cured, and there was no longer any clinical symptom present which should explain these painful contractions. The presence of "fissure" in the rectal mucous membrane could not serve as an explication of the appearances, as the tormenting pains still persisted when the fissure became covered with skin. Taking into account the peculiarity of the pains in the rectum, which chiefly consisted in spasmodic contractions, Prof. Neumann thought it necessary to examine also the sphincter ani externus and to find out whether there were not present pathological conditions also in this muscle, which should be able to explain the subjective symptoms. This was so much the more probable as it was known that, in gummosis degenerations of the rectum, involuntary defecation took place owing to the fact that the sphincters have lost their normal function. In cases of myositis it was chiefly the blood-vessels of the perimysium from which the infiltration derived its origin; the muscular fibres were not, in the beginning of the process, much changed in their appearance, whereas the interstitial connective tissue con-

tained many serpentine and dilated blood vessels with granulation-cells. Soon after these appearances, the nuclei of the muscular fibres began to proliferate, and instead of one nucleus, from five to twelve nuclei lay close by each other in one series. Such a proliferation of the nuclei of the muscles could persist in slight inflammations of the muscles, according to the experiences of Recklinghausen, Billroth and Leube. The interstitial connective tissue filled itself more and more with granulation-cells, the muscular fibres became thinner, and when the process was completed, the muscular substance was replaced by connective tissue.

The clinical symptoms were intense pains, especially during and after defecation, which in easy cases continued only for a short time after defecation, but in severe ones persisted for hours and even for days with the greatest intensity. These pains became still more vehement when the myositis was combined with fissuræ. The syphilitic affections of the sphincter muscle were more painful than those in other muscles, and they were also the most frequent ones. The myositis syphilitica was observed at the clinic of the lecturer three times in all other muscles except the sphincter, in an interval of five years, whereas in a much shorter time, since Prof. Neumann had begun to give a greater attention to this affection, it was observed to occur five times in the sphincter muscles, and this in an interval of 1½ year—the cases of gumorous degeneration of the rectum being excluded. The syphilitic inflammation of the sphincter was to be observed more commonly in women than in men, which could be explained by the fact that "papulæ" and "rhagade" in the anus were to be met with more frequently in the female sex than in the male one. In future, even when all other symptoms of the syphilis have disappeared, and only pains which are caused by the contractions of the sphincter muscle are present, we shall have to begin a general syphilitic treatment besides the local ones by remedies which facilitate resorption. When the pains do not disappear after this course of treatment, sphincterotomy will surely cure the patients. In the tertiary stage of the syphilis, the appearances of paralysis with consecutive changes in the muscles were more striking, as the muscular substance of the periproctal connective tissue was destroyed, and strictures and involuntary defecations thus supervened.

At a recent meeting of the "Verein deutscher Ärzte" of Prague, Dr. Herrenheiser delivered a lecture on his experience with cocaine as an anæsthetic in ophthalmic surgery, and stated, in the beginning of his communication, that when the subcutaneous injections were executed with a 10 per cent. solution of cocaine, the anæsthesia was after the interval of a minute so complete that operation could be commenced. As to the operations on the lens, he could only confirm the experiences of other investigators. In iridectomy, complete anæsthesia was in most of cases present, and only in leucoma adherens, and especially in that after ulcer serpens, the patients had painful sensations, which Dr. Herrenheiser explained by the strong traction which was executed for the detachment of the iris. Though

cocaine was availed of in several hundred cases, the cocaine intoxication which was described by many authors, had at the clinic of Prof. Sattler been observed only once. This was a case in which 0.04 grams (4 centigrams) of a 10 per cent. solution were injected subcutaneously for the anæsthesia of the upper eyelid, and in which the operation was abandoned. Dr. Herrenheiser believed that it was either the biosyncrasia against the remedy in question which gave origin to these symptoms, or that, owing to the late beginning of the operation, a too great quantity of cocaine was absorbed. When, however, the operation was begun one minute after the injection, the greater part of the liquid emptied (flew off). Losses of epithelium of the cornea were very frequently observed, but in careful asepsis and antiseptic they were without any danger for the patient. The cocaine should either be prepared in an antiseptic fluid (in the clinic of Prof. Sattler it is prepared in sublimate of a concentration of 1.0:10,000), or it should be heated to boiling before administration. Dimnesses of the eye, such as were first described by Bunge, have not been observed hitherto. Thirty-nine great operations on the eyelids were performed since the end of May, 1887, and in all the cocaine proved very good.

Seven enucleations of the eye, in which the injections were made under the conjunctiva (as far as possible behind the conjunctiva), were also quite painless. The statements that chemosis of the conjunctiva hindered the anæsthesia proved to be incorrect, and this was also true of the statement that the enucleation of eyes which had to be removed owing to intense pains was very painful to the patient when subconjunctival injection of cocaine was resorted to.

Charles v. Langer, ordinary professor for normal anatomy at the Vienna Medical Faculty, died on the 8th of the current month in Vienna. He was born in 1819 in German Bohemia, and made his preliminary studies at Pilsen in Bohemia, and studied medicine at Prague, where he obtained his diploma as Doctor in Medicine. Langer was for a long time assistant to the distinguished anatomist, Prof. Hyrtl, and in 1874 he was named ordinary professor for descriptive anatomy at the Vienna Medical Faculty. He had a very good reputation as a teacher, and among his works, those on comparative anatomy, on the blood-vessels, the joints, the growth of the heart, the anatomy and physiology of the skin, the mammary glands, deserve to be specially mentioned. He was the recipient of several distinctions and was also knighted by the Emperor.

DOMESTIC CORRESPONDENCE

LETTER FROM GINCINNATI.

(FROM OUR OWN CORRESPONDENT.)

The University—Medical Colleges—Medical Societies—State Medical Laws—The Children's Hospital—Typhoid Fever.

A persistent and determined effort has been made by the Board of Trustees to incorporate the various

institutions of learning under the banner of the Cincinnati University. This effort met with a great amount of strong opposition at first, so that for a time it seemed as though the enterprise would have to be abandoned; but at present the prospects of ultimate success are very bright. The University is largely supported by the income derived from a bequest made in the will of the late Charles McMicken; a tax of one tenth of a mill is also levied upon the taxable property of Cincinnati for its support. The bequest of Charles McMicken amounted to upwards of seven hundred thousand dollars; this amount is almost entirely invested in real estate in and around Cincinnati. In making their propositions to the educational institutes the Board asked for no abrogation of the rights and interests they enjoyed as private corporations, but merely wished them to become departments of the University, thus making the institution what it claimed to be—a University. The Medical College of Ohio, the Miami Medical College, the Clinical and Pathological School of the Cincinnati Hospital, together with the Ohio Dental College and the College of Pharmacy, now constitute the Medical Department. The number of students in this branch of the University will aggregate five hundred, thus giving this particular branch no mean proportions when compared with the same department in the various other Universities of our country; and at the same time it will act as an incentive to labor for the union of the College of Music, the Art School, the Law School, and the other Schools with the University.

The city has four Medical Societies in active operation, viz: The Academy of Medicine, which is the largest and most flourishing one; the Cincinnati Medical Society, which is an off-shoot from the above-mentioned Society. Walnut Hills, one of our populous and thriving suburbs, has a Society of its own. The Hamilton County Association of Physicians is the newest arrival; in fact it has not passed its first anniversary as yet. The inefficient state of our medical laws, together with the large amount of quackery, gave rise to the feeling that some steps should be taken to remedy these evils, and it was for the purpose of remedying these defects that this particular Society was organized, and strong efforts will be made this winter to efface some of these blotches from our State and city.

During the past year an elegant Childrens' Hospital has been erected upon Mt. Auburn, through the munificence of Messrs. Thomas and Joseph Emery. The government of the Hospital is vested in a Board of Directors appointed by the Episcopal Church, but the institution was given under the condition that neither sex, color or religion should be allowed to influence the admission of patients.

Typhoid fever prevailed to an exceedingly great extent during the months of September, October and November, it being estimated that no less than three thousand cases occurred during these three months. The type of the disease was quite mild, consequently the mortality was small when compared to that of previous epidemics. The disease was not confined to any particular section of the

city, but was quite generally distributed over the entire territory; being found both on the hills and in the valley, and to about an equal extent. While there were a few cases that presented the typical symptoms of typhoid, the majority differed very markedly from the description ordinarily given of this disease; and in order to verify this assertion, I shall endeavor briefly to point out the most apparent points of difference: The stage of invasion was very short, in many cases apparently totally absent, there being none of the marked prodromes so common in enteric fever, thus giving an apparently abrupt invasion. The temperature, instead of beginning mildly and slowly mounting up until it had reached its maximum, then slowly and gradually declining until a normal temperature was reached, would be very high (104° – 105°) at the very inception of the disease, so that we often found that the highest fever occurred during the first two or three days, and that the course of the fever was very irregular and uncertain, sometimes reaching the normal standard in less than two weeks, and then again continuing for an almost indefinite period.

In regard to the symptoms referable to special organs, we also find a wide divergence from these ordinarily present in typhoid. Instead of the low muttering delirium we found in these cases an active, sometimes violent delirium, which in some cases would appear before the end of the first week and persist throughout the entire course of the disease. Adynamia was less marked; sordes, bed-sores and rose-spots were rendered conspicuous by their absence in the vast majority of cases. Cephalalgia and backache were common, though ordinarily not severe. Bronchitis and hypostatic congestion have not been marked features. When we come to consider the abdominal symptoms we find the widest deviation from ordinary typhoid; constipation was the rule and diarrhea the exception; tympanites was absent, or but slightly marked. Tenderness and gurgling in the right iliac fossa was present, but with this there was a diffuse abdominal tenderness. Intestinal hæmorrhages were more frequent than usual and uncommonly severe. Quinia and other cinchona salts were powerless to arrest the course of the malady. Antifebrin and antipyrin were very extensively used for their antipyretic action, and the results obtained were very good as a rule. From this short *résumé* we are irresistibly drawn to the conclusion that although there were some points of resemblance to typhoid, yet the symptomatology was quite different from that disease in many particulars.

What is the nature of this affection? Is this the simple typhoid fever, or is it a combination of typhoid with some other malady? In all those cases in which an autopsy could be obtained ulceration of Peyer's patches was found; in some cases the ulceration was very extensive. This epidemic is certainly very suggestive of Woodward's typho-malarial fever; it also bears a strong analogy to that form of disease that was designated "bilious remittent fever" by the older medical writers. In regard to the causation of the disease we can only call attention to several attendant circumstances and allow the reader to

draw his own conclusions. Our supply of drinking-water is obtained from the Ohio river, at a point near the eastern extremity of the city; above this point there are several sewers that empty their filthy contents into the river, and there are three or four more that empty a short distance below the water-works. The river has been lower this season than for several years past. Another possible factor in the causation of the disease may have been the extensive improvements that have taken place in our streets the past year. All of our principal streets have been torn up and repaved, and the turning up of so much soil in the midst of the city may possibly have been an etiological factor.

That neither the water-supply nor the repaving of the streets is the sole cause is proven by the occurrence of many cases in the outlying districts, where they rely exclusively upon springs, wells or cisterns for their water-supply. One family, who relied entirely upon spring-water, were all (five people) prostrated by the disease. There had been no other case in the neighborhood prior to the time of their attack.

The majority of our people boiled their drinking-water previous to its use, but, so far as discernable, with little or no effect upon limiting the spread of the disease. It was impossible to trace the course of the epidemic, as we are never free from cases of typhoid, and these cases appeared to develop almost simultaneously in every district of the city. One prominent fact has been observed in relation to this disease, and it appears to be true as regards all the infectious diseases, that there were more cases, and the disease persisted for a greater length of time, in the poorly sewered districts than in those that were well supplied in that respect. J. C. O.

MEDICAL LEGISLATION.

Dear Sir:—The several editorials that have appeared in *THE JOURNAL* recently, relative to legislative interference in medicine are terse and eminently correct. The question, however, immediately arises: How can it be accomplished?

Here in the Peninsular State, where schools are free and education is fairly forced into the masses by law; where we have a university second to none in the World, perhaps; where learning runs rampant and knowledge becomes stale, our legislators are impotent when a bill to protect the people from quackery is presented to them. Canada and the surrounding States have, to a certain extent, forced charlatanism out of their limits by legislative enactment, but we stand here like Bartholdi's Statue of Liberty. We are enlightening the World but there is a horde of vampires that have crawled in from other States, besides many of our own, that we foster, which bask in the sunlight of our intelligent toleration and air their ignorance at the base of the statue.

Lawyers that deal with the people's wealth, dentists that tamper with their teeth, and druggists that dispense their pills, all are under control of law, but the man that deals with their lives may be anything or nothing, only so he has registered himself—Heaven

save the mark—as a “doctor.” “I’d rather be a dog and bay at the moon” than practice ‘mongst a set of knaves and charlatans, but yet I’ve done so for thirty years and more, and still survive—as likewise do the quacks.

In the year 1869 I had the honor, or indiscretion, whichever you may choose to call it—of introducing the first bill in the Michigan Legislature to “Regulate the Practice of Medicine.” That was the title of the bill. It was a slightly altered transcript of the Ohio law then in force. It was very mild. All it called for was a board of examiners, to be appointed by the Governor, to attest to the applicant’s qualifications in the fundamentals of medicine. What do you suppose those wiseacres did with it? They tossed it up and threw words at it. They amended it. They amended it repeatedly. The miscreants got so many amendments in finally that they crowded out the body of the bill, and there wasn’t enough left to hold an inquest on. Then they sat down on it, and one of those old supervisors—such as adorn our legislature—told me that “death follows in the wake of you graduates.”

It is easy enough, therefore, to infer that our high education does not necessarily contribute to the public weal, for Georgia, North Carolina, and other Southern States, where ignorance is supposed to be the rule and education the exception, have for years prohibited quackery by law.

“A little learning is a dangerous thing,” and our legislators in the main have got the requisite amount to make them an object of fear. Still, although my bill and I were fearfully mangled at the time spoken of, I believe that public opinion is becoming gradually educated up to a point where people can see that honorable members of the profession are working for *their* interests, and not from any mercenary motive.

If the profession throughout the land would see to it that their representatives in the legislature were not in collusion with charlatans, and would post them relative to the importance of legislative action—and especially correct action—before it is everlastingly too late, our case is not entirely hopeless. The apathy of physicians has been the bane of the profession in this respect, and I presume to say it will continue to be so until “doctors” overrun the land like the frogs of Egypt. Still, notwithstanding the large and increasing output of graduates from our multiplying colleges, the probability is that if simple graduation from a reputable school were the only standard of admission to practice, the field would not be crowded, provided all others were excluded.

MICHIGAN.

DOSE OF CORROSIVE SUBLIMATE FOR CHILDREN. A CORRECTION.

Dear Sir:—In the report published in *THE JOURNAL*, of my paper on diphtheria, recently read before the New York County Medical Association, occurs the following: “Dr. Smith thought that the quantity of bichloride that could be safely administered to children of various ages was about as follows: To a child of 2 years, $\frac{1}{16}$ grain; 4 years, $\frac{1}{4}$ grain; 6 years, $\frac{1}{3}$ grain; 10 years, $\frac{1}{2}$ grain.” The latter

sentence as it stands might do much harm, since diphtheria is so prevalent that physicians are anxiously inquiring how it shall be treated, and the sublimite in an over dose may be more fatal than the disease for which it is prescribed. What I did say was that I thought that the above were about the quantities that should be given in divided doses, in ordinary cases, in twenty-four hours, and I repeated this with emphasis, in order that there should be no mistake. Permit me also to correct another error relating to statistics of the treatment of diphtheria, which is going the rounds of the medical press. Dr. Lunin, of St. Petersburg, made comparative trial of various remedies in the treatment of diphtheria in the Oldenberg Hospital, with the following result:

Cases, 296. Percentage of deaths, 55.

Fibrinous Form.		Septic Phlegmonous Form.		General Result.
	Deaths.		Deaths.	Deaths.
By turpentine,	8.30 per ct.	By turpentine,	81.00 per ct.	43.4 per ct.
By re-osorine,	20.00 "	By resorcin,	89.5 "	65 "
By sublimate,	30.20 "	By sublimate,	92.5 "	45 "
By chloine,	31.60 "	By chloine,	100 "	53 "
By fer. perchlor.	32.60 "	By ferri perchlor.	76.5 "	36 "
By bromine,	46.7 "	By bromine,	88.9 "	69.7 "

In some of the medical journals of largest circulation the table of general or total percentage of deaths is substituted for table of percentage of deaths in the septic phlegmonous form, the correct table of the result of treatment in the septic phlegmonous cases being omitted. As Dr. Lunin resides so far away he probably will not be aware of the mistake which translators have made. His use of the sublimite was only local, and hence his statistics as regards this agent are not very valuable.

Yours truly, J. LEWIS SMITH, M.D.

64 W. 56th St., New York, Jan. 19, 1888.

NECROLOGY.

JOSEPH O. WEST, M.D.

Dr. West was born in Barnstead, N. H., June 21, 1823, and died January 28, 1887. When quite young he came to Lowell, Mass., with his mother. He fitted for college at the high school, and graduated from Dartmouth in 1845. He immediately entered the office of Dr. Nathan Allen, of Lowell, as a student of medicine. Having attended lectures at Harvard Medical School, he graduated from that institution in 1848. Dr. West soon afterwards settled in the town of Princeton, Worcester county, Mass, where he continued his professional duties until his death. By education, genial manners, quick observation and a thorough knowledge of human nature, he was admirably fitted for medical practice. Dr. Thomas N. Gage, of Worcester, who as a neighboring physician had long known Dr. West, bears this testimony:

"To great natural abilities, trained, disciplined, and educated in the schools, he added high professional attainments, and the richer graces of a pure and consistent Christian life. And such natural endowments and acquirements, an intelligent and discerning people were not slow to recognize and appreciate. Thus it came about that early in his life,

and to the end, he was respected, trusted, honored, and beloved, as it falls to the lot of very few to be. Both profession and laity gave him, without reserve, their confidence and regard. As a physician he was remarkably modest and unpretending, yet judicious and skilful, and equal to any emergency. High professional attainments and skill, and the wisdom gained by experience, he held as sacred trusts, to be administered under a sense of great accountability, and he was faithful to the solemn charge."

He was a member of the American Medical Association since 1865.

His death was caused by acute laryngitis, followed by typhoid pneumonia and nephritis. He leaves a widow (whose maiden name was Ellen M. Gregory, of Princeton), with four daughters. N. A.

ASSOCIATION ITEMS.

THE ANNUAL MEETING.—We learn from the Chairman of the Committee of Arrangements for the next meeting, that the famous Cincinnati Music Hall has been secured for the general sessions of the Association and that all the Sections will be accommodated with rooms in the same building. The members are to be congratulated that such excellent and convenient arrangements for places of meeting have been secured.

The Committee of Arrangements and its various sub-committees are fully organized and are working energetically to make the approaching meeting in every way attractive and successful. Reduced railroad fares have already been secured. Details in regard to them will be given later.

MISCELLANEOUS.

THE OHIO STATE SANITARY ASSOCIATION will hold its fifth annual meeting, at Toledo, Ohio, February 9 and 10, 1888. The meetings will be held in the G. A. R. Hall, corner of Adams and Ontario Sts., commencing at 8:30 A.M., of the 9th, with a full programme of papers and important topics for discussion. President, Professor E. T. Nelson, Delaware; Secretary, R. Harvey Reed, M. D., Mansfield, Ohio.

ROLL OF MEMBERS: CORRECTIONS.—The residence of R. F. Jleny, M. D., Princeville, Indiana, in the list of permanent members in THE JOURNAL for December 31, 1887, should have been Princeville, Illinois. Also for E. P. Dunning, Paw Paw, Michigan, read E. B. Dunning, etc. For Hall, Calvin C., read Halsey, Calvin C., Montrose, Pa.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JANUARY 21, 1888.

Surgeon C. B. Gold-borough, to proceed with insane seaman from Chicago to Government Hospital for the Insane. January 16, 1888.

Asst. Surgeon F. C. Heath, to proceed to Buffalo, N. Y., for temporary duty. January 21, 1888.

Surgeon G. W. Storer, to proceed to Wilmington, N. C., Georgetown and Charleston, S. C., Savannah and Brunswick, Ga., Fernandina, Jacksonville and Pensacola, Fla., as inspector. December 30, 1887.

¹ Omitted from previous lists.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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CHICAGO, FEBRUARY 4, 1888.

No. 5.

ORIGINAL ARTICLES.

A CASE OF PEMPHIGUS OF THE CONJUNCTIVA, WITH REMARKS.

Read in Section on Ophthalmology and Otology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY ROBERT TILLEY, M.D.

OF CHICAGO.

The case that I present for inspection is happily not a common one. You see a boy of 12 years absolutely blind. He can simply distinguish night from day, and as he is certainly beyond operative relief, he may with scientific accuracy be termed blind. He is blind, however, not from any disorder of the optic nerve, not from any central lesion, not from any affection of the uveal tract, not from any primary affection of the lens or cornea, not from any traumatism, but from a complete closure of both upper and lower conjunctival cul-de-sacs, and a complete adhesion of both lids to the eye balls; the adhesion having taken place with the lids nearly wide open.

He was in practically the same condition in the early part of the year 1882, when I first saw him, as he is now, only at that time there was a large amount of photophobia and a certain amount of acute swelling of the borders of the lids, and there was a good deal more evidence of the existence of corneal tissue than now. There was at that time practically no difference in the two eyes. The left had slightly the most unpromising appearance. I say he was practically in the same condition. I mean, of course, relative to his eyes. There were at that time numerous bullæ over the body and one in the buccal cavity on the left side, on the cheek, and an angry vaccination pustule about an inch in diameter on the left arm. These bullæ continued to appear at intervals over the body for about four years. There has not been any appearance of them, according to the statement of the mother, for the last year. All traces of them have disappeared except two almost symmetrically located on the two sides of the chest, where suppuration evidently occurred. These you can inspect for yourselves.

The history obtained from the parents is that all the children were vaccinated at the same time, but that the vaccine point which was about to be used for the patient was dropped, seized by a dog, and still used. That after the vaccination fever occurred,

and from that time his eyes became inflamed so that in a brief period "they were as red as raw beef." The vaccination occurred in February, 1881, and the mother is confident that the boy has not been able to see since the month of April, 1881. Previous to the vaccination the mother is confident that there had been no affection of the boy's eyes whatever. I mention this history particularly, because of its relation to a quotation by McCall Anderson from Sir Erasmus Wilson, which I shall make later.

It was to relieve this severe redness of the eyes and closure of the lids that the child was taken to an eminent oculist of this city about the month of April, 1881. I am unable to describe the condition of the eyes at this time but I learn that the attendance was limited to about three or four visits.

The interesting feature of this case is the evidence of healthy eyes prior to February, 1881; the appearance of redness and swelling and, according to the mother, inability to see since April, 1881, and my own personal observation of this hopelessly blind condition in the month of January, 1882. All certainly within a year, and in all probability, the whole difficulty having occurred in two months. Further, the presence of bullæ on the body developed after the destructive closure of the lids; their appearance in successive crops for a period of four years. The disappearance of all traces of these bullæ excepting two which ulcerated on the chest; and I think I may add, the absence of any evidences of any inherited constitutional trouble. I will add here that none of the other children were affected in any similar way.

Are we then justified from these facts, together with the present condition of the eyes which you can inspect for yourselves, and which will be described more minutely later, in concluding that during that period of severe redness and inflammation the bullæ of pemphigus invaded so extensively the conjunctiva as to destroy its texture completely and cause this complete adherence of the lids to the eyeballs. In other words, that this is a genuine case of that rare affection, pemphigus of the conjunctiva, of an unusually severe type.

You will observe that the time of development of the disease to such a disastrous result was very short and that there is no evidence of any previous trachoma. This I consider strong evidence of some destructive agency, and in the absence of traumatism of any kind, would be best explained by supposing the existence of blebs with possibly slight suppuration destroying the thin and delicate conjunctiva.

As you inspect him you will observe that the cornea of both eyes, if any cornea may be said to exist, are dry and horny. That they are never moistened with tears or mucus of any kind. You will see that the lashes are not much inverted; that the lids are completely adherent to the globes throughout their whole extent, and yet that the adhesion is so loose that it is evident that the pathological process has not invaded the deep tissues of the lids. You will see that the puncta lacrymalia are obliterated, or at any rate not visible; that the palpebral fissure is of nearly normal length; that the distance between the lids in the centre is not far from normal, but that from the borders of the lids there extends over the eyeball a dry, horny pellicle, and that in the centre of the external surface of each eyeball is a dry small residue of a former tissue. I have seen no evidence of the secretion of tears. The movements of the eyeball are practically unimpeded. I think you will fail to find any evidence from the contour of the face or the teeth of inherited trouble. The teeth, however, are markedly irregular, but they cannot be referred to the classical teeth of Hutchinson. When I saw him in 1882 this peculiarity of the teeth had, of course, not appeared, he was then about 6 or 7 years old. As you look at the teeth it would appear that the two upper central incisors are separated by a tooth of another kind.

There is one thing that I must not fail to mention, and that is, that the mother has been and still is the subject of a contracted condition of the conjunctiva of the upper lids resulting in inverted cilia. That is the only fact that seems to be of interest relative to the family history. There are in all six children, with only one death.

Early in the year 1882 I tried, assisted by Dr. Gradle, and Dr. Niles the family physician, to separate the lids from the ball of the left eye, but the result coincided with the experience of others—it was a failure. There were no operative measures taken with the other eye.

Assuming that we are justified in calling this the results of a case of pemphigus, then it must be quite a unique case. According to Pfleger, as quoted by W. Lang, in the Transactions of the Ophthalmological Society of the United Kingdom, 1886, Hebra had seen up to the year 1873, 200 cases of pemphigus, but in no case did it affect the conjunctiva. Of course it may be said that patients so afflicted would be more likely to visit the ophthalmologist than the dermatologist, but the cases are also exceedingly rare in ophthalmological literature. The subject has on two occasions been brought before the Ophthalmological Society of the United Kingdom, and in the Transactions of the Society for 1886, Mr. W. Lang reviews the literature of the subject and says that up to that time only 23 cases had been published. The first was published by Mr. White Cooper, in the L. O. H. Reports, July, 1858, and that only one of these twenty-three was published in America.

In the *Traité Complet d'Ophthalmologie*, by De Wecker and Landolt, p. 438, we read: "Pemphigus even when universal only rarely affects the conjunctiva." Professor von Arlt, of Vienna, in his

"Diseases of the Anterior part of the Eyeball," as translated by Dr. Lyman Ware, says: "Conjunctival pemphigus is an exceedingly rare disease. The author has seen but two cases, and they had run their course." If a veteran of von Arlt's experience had only seen two cases there needs no other evidence of its rarity.

Mr. W. Lang, in his report above referred to, presents three cases, two of which had already been presented to the Society under the title of "A Peculiar Affection of the Conjunctiva." Mr. Lang strove to show that the cases published under the head of "Essential Shrinking of the Conjunctiva," by von Graefe, and the *syndesmitis degenerativa*, of Stellwag, properly belong to the same affection and should be classified as pemphigus of the conjunctiva. The subject, however, elicited much discussion and difference of opinion.

In referring to the dermatologists we find in Besnier's translation of Kaposi, p. 57: "In pemphigus bullæ have also been observed on the conjunctiva. Pemphigus when it attacks the mucous membrane is sometimes confined to that membrane or precedes the lesion on the skin."

According to McCall Anderson, it seems to be occasionally called into activity as the result of injuries, he says: "Sir Erasmus Wilson has recorded two cases of this kind." A servant girl poisoned her hand with a red paste with which she was cleaning brass. A few days afterwards a crop of bullæ intermingled with ecchymosed spots came out over the wrists and forearm and continued to trouble her for seven years. The other case was one of a medical man who punctured his right hand. Three or four weeks afterwards an eruption of bullæ made its appearance on his thigh and was repeated from time to time for eighteen months. The outbreak was preceded by feverish symptoms, there was a scalded sensation in the skin and the next morning a fully developed bulla would be discovered."

I will not attempt to refer this case to its appropriate section as pemphigus vulgaris or pemphigus foliaceus. I will leave that for the dermatologists.

The special characteristics of bullæ on the conjunctiva, if there are any, must also be left for those who have the privilege to observe them. I can find practically no direct statement of a well observed case. All the writers on the subject say that such blebs on the mucous surfaces are very fugitive, and from the delicate nature of the mucous membrane of the conjunctiva and the constant friction of the parts, their character would be still more fugitive on the conjunctiva. I certainly saw one on the inside of the left cheek. It was about $\frac{3}{4}$ of an inch long and $\frac{5}{8}$ wide. It was moderately distended, the edges terminated abruptly, there was no manifest inflammation around the edges, and it did not seem to give any serious inconvenience. The contents were turbid as seen through the walls of the bleb.

I have no evidence to offer as to the definite histological changes which occur in such cases. I can find none.

The question of diagnosis in its early stage, from

the evidence at our disposal, must be difficult. Mr. W. Lang, in speaking of the one undisputed case that he presented to the Ophthalmological Society of the United Kingdom, confesses he had not recognized it until Häumler directed his attention to it. Landolt, in reporting a case, says it passed through the hands of Sichel senior, Liebreich unrecognized, and adds, that having had the opportunity of seeing the patient for several months he was convinced that the case was one of pemphigus. Von Arlt says that one of the cases he refers to had been regarded as an obstinate manifestation of syphilis until it was recognized by a dermatologist. W. Lang² says, in speaking of Steffans' case, "only once was a vesicle seen on the conjunctiva, and this occurred on the skin-like shrunken lower conjunctival sac." Under these circumstances the diagnosis must be conceded to be difficult. I have no suggestions to make.

As to treatment little or no definite information can be offered, at any rate such as is based on previous experience. I should say that any measures with which the surgeon is most familiar in the use of for the relief of an inflammatory condition of the mucous membrane, diluted so as to conform to the supersensitiveness of the eye, would be considered an appropriate treatment, taking as a criterion of applicability, that the treatment should leave the patient more comfortable, and that independent of any narcotic influence. Of course if it were possible to anticipate any such disaster as this, any surgical measures having in view the absolute prevention of friction of the lids with the eyeball would be justifiable.

I have said that my efforts to detach the lids after they were completely adherent to the eyeballs were fruitless; and I quote from Messrs. Lang and Juler, to show that their experience was the same. Mr. W. Lang says:³ "Unfortunately, like some cases of pemphigus,"—he was speaking of cases otherwise classified—"it was not amenable to treatment, although every means, both medical and surgical, has been tried, such as transplanting a conjunctiva and other mucous membranes into the shrunken conjunctival sacs. M. Juler says in reference to one case: "The house surgeon attempted to separate the lids from the globe by incision, and performed the operation of peritomy. The operative interference" he adds, "was most pernicious." I have seen some of the transplantations of mucous membranes for kindred cases at different stages in its history, and although they appear well at first a few months is sufficient to destroy all enthusiasm associated with the hoped for success. Of course this remark does not apply to transplantations for other affections.

TYPE IN SCHOOL BOOKS.—The Austrian Minister of Public Instruction has issued a decree forbidding the use in public schools of books printed in small type. Small type is bad enough, but what can be worse than small German type!

THE GERM-THEORY OF DISEASE AND ANTISEPTIC TREATMENT.

Read before the Kew-Forest County Medical Society, Dec. 6, 1887, and published by special request of the Society.

BY W. T. ECKLEY, M.D.,
OF HURPER, IOWA.

It is not that I would add anything new to the already voluminous literature on bacteriology, that I call your attention to the germ-theory of disease, but from a keen realization of the fact that so intimately interwoven with current medical and scientific literature are such terms as: bacteria, incubator, desiccator, serum media, culture-media, antiseptics, asepsis, listerism and serial-cultivation, and such prodigious proportions has the new theory already attained during the past decade, that, when we consider the overwhelming evidence, both direct and circumstantial, in favor of the new theory, we are compelled, if we would read intelligently, to bring order out of chaos, and at least gain a well-formulated idea of what is and what is not the germ-theory, and what does and what does not constitute modern antiseptic treatment, medical, surgical, obstetrical and gynecological.

The greatness of the theory demands our attention and solicits our calm and unbiased judgment. Cocaine is only awaiting the next revision of the pharmacopoeia to become official and take her place in our materia medica with her elder official sisters. The germ-theory of disease is only awaiting that slow popular acceptance that ever embarrasses the advent of discoveries. In medicine, naturalism, empiricism, eclecticism, humoralism, fluidism, solidism, chemicism, mechanicism, stimulum, spiritualism, phlogisticism, pyrexism, vitalism, neuro-pathology and physiological therapeutics, have all undergone the same searching scrutiny that the germ-theory is undergoing to-day. Never were the blue depths of space more carefully studied by the telescope than are the tiny microorganisms of air to-day studied by the microscope. Never did Columbus look more keenly across the waves of the Atlantic for the Indies, than did Pasteur and Tyndal traverse the field of the microscope for those infinitesimals that cause fermentation in wine, breed discontent in open wounds, or evoke direful epidemics of splenic fever. And I might add, never did clouds more portentous appear on the medical horizon, that threatened to engulf the whole theory and practice of the healing art, than those little nebulae which a few years ago, originated across the sea, and now overspread the medical sky on two hemispheres.

The nebular hypothesis would explain the genesis of the heavenly bodies, and nebulous masses, hitherto considered irresolvable, have been resolved by the Rosse telescope and their stellar identity demonstrated. The germ-theory of disease would not, nay, in the nature of things could not, explain the genesis of the myriad microorganisms that fill sea and air with their ubiquitous presence; but vital phenomena formerly attributed to spontaneous generation, were resolved by the microscope, and simultaneously were added to Sylva's already opulent pos-

²Oph. Soc. of the United Kingdom, Trans. 1886, p. 128.

³Locus Cit.

sessions, thousands and thousands of micrococci and bacilli.

Having thus explained the aim of my paper, allow me to call your attention to the body of the argument under the following headings:

1. What is the germ theory of disease?
2. What is antiseptic treatment?
3. Wherein do these concern the general practitioner of medicine?
4. Wherein will the theory influence the practice of medicine?

The germ-theory of disease is the doctrine of contagium vivum. It centralizes in living, organic, vegetable, parasitic, microorganisms, of various genera and species, the unique property of generating under favorable conditions, in organic beings, certain pathological and physiological processes. Koch demonstrated in splenic fever a causative germ which he denominated *Bacillus anthracis*; Klein a bacillus in typhoid fever; and quite recently Dr. Pasteur demonstrated so called useful bacilli to which he attributed the following physiological characteristics: No. 1. Digests albumen. No. 2. Dissolves fibrine. No. 3. Dissolves gluten. No. 4. Coagulates milk. No. 5. Dissolves casein. No. 6. Transforms starch into sugar. No. 7. Changes lactose to lactic acid. No. 8. Changes glucose to alcohol.

According to the theory, these parasites constitute an ever-present legion whose individual functions are well specialized, although the votaries of their cause have not yet furnished a Linnaeus to classify their natural orders and formulate rules for the determination of their sex.

As certain seeds sown in the warm zones yield the delicious fruits of the tropics, but sown where atmospheric and telluric conditions are unfavorable, perish by the wayside, so these vegetable germs, whose habitat is our atmospheric air, demand favorable environment for the reproduction and propagation of their species. Each germ—an ephemeral race—and the majority of which are harmless, generates phenomena of its own kind. Just when and where the Adam bacillus came into existence, the germ theory no more explains than does the nebular hypothesis explain the origin of the "self-luminous substance diffused through space," which afterward became the starry universe. Here the world revealed by the microscope, and the million worlds revealed by the telescope—strange and wonderful extremes—revert alike for the story of their birth to Holy writ.

The nomenclature and classification of bacteria are imperfect in proportion to the darkness which involves bacteriology. Zopf distinguishes 1st, spherical; 2d, rod-shaped; 3d, filamentous; and 4th, branching bacteria. Bacteria is the general name for germs, while the expression bacillus is used in a generic sense and applies to specific germs supposed to sustain a causative relation to certain pathological phenomena in the economy. Thus the comma bacillus, according to Koch, is pathognomonic of Asiatic cholera, the bacillus malandrie of glanders, the bacillus lysse of hydrophobia, the bacillus lepre of leprosy, the bacillus

malariae of malarial fever, the bacillus tuberculosis of tubercle.

Micrococci are bacterial germs found in decomposition, and are very hairsplittingly differentiated from their bacillar brethren by bacteriologists, being classed as 1st, septic; 2d, zymotic; 3d, pathogenic; 4th, specific; and 5th, chromogenic. Micrococci are considered causative in pneumonia, diphtheria, gonorrhœa, vaccinia and variola. The specific nature of bacilli seems established, while micrococci are considered causative in suppuration and putrid processes.

Dr. Koch says: "In no instance has it been proved that an infectious disease is due to a micro-organism, unless the microorganism in question is present, either in the blood or tissues of the animal affected with the disease, after death. The micro-organism must be capable of cultivation in some suitable media outside of the body, and after being cultivated for several generations, must cause the same disease when introduced into the body of a healthy animal. Finally, in the body of the last animal, the same parasites should be found as in the former case."

I gather the following detached thoughts concerning germs and the germ-theory from current medical literature: "That the germ-theory is now an established fact; that decay and putrefaction are due to living germs; that many species of germs are constantly present in the air; that disease-germs are not generally present in the air; that these latter are prone to confine themselves to one locality; that they are carried from place to place by fomites, air and water; that disease germs multiply in contact with moisture; that some germs are indigenous to certain countries; that all the leading hospitals in the world have adopted the antiseptic practice; this being obligatory in the Prussian army and navy."

Here then we have spread out before us, in microscopic proportions, the agents causative of many human maladies: Bacillus and micrococcus, tenacious of vitality, decimate society by typhoid fever, or scourge a trembling and panic-stricken population with Asiatic cholera. Here the exanthemata bear testimony to their presence, and there weeping mothers, rigid quarantine, prompt disinfection and newly-made graves, are silent witnesses to the late and awful visitation of micrococcus diphtheriae.

The germ-theory was first announced by Pasteur, and unhesitatingly adopted by Lister and others. In this theory were broad fields for therapeutic indications, and the development of these indications is radically changing the practice of the healing art in all civilized and progressive Nations.

One of the most ardent advocates of Pasteur's germ-theory was Dr. Lister, who, thoroughly imbued with the idea that microorganisms, ever present in the air, and coming in contact with open wounds, cause suppuration and abscess, conceived the idea of an antiseptic dressing. The practice instituted by him is to this day known as listerism in surgery. All antiseptic surgery is listerism, but not all listerism so-called is antiseptic surgery. Listerism means absolute freedom from infectious germs.

Dr. Stubbs in his recent address to the surgical section of the American Medical Association on "Wound Dressing" said: "Such is the rate of progress, especially in the line of bacteriology, that surgical works published but five or ten years ago, are now considerably behind the times." He further adds—quoting from memory—"this is the bacteriological era in medicine. Probably the majority of the profession believe in antiseptic surgery, but none in listerism *in extenso*. So well-proven is antiseptic surgery say some, that a surgeon should be held liable at law for damages, if in the practice of surgery, where he had failed to use antiseptics his patient was not healed."

Antiseptic surgery provides that the operating room be freed from disease germs; that operator and attendants be bathed, disinfected and clad in antiseptic garb; that hands of operator and assistants be scrubbed in cor. sub. sol. 1-1000; that the part to be operated upon be likewise treated; that all instruments be immersed in ac. carb. sol. before operation; that drainage tubes, bandages, protective, and ligatures be all antiseptically treated before operation; that the wound be antiseptically dressed.

Concerning internal medicine, Dacosta expresses himself as follows: "Thus far it must be confessed we have had, as regards internal medicine, no success in the search after agents which destroy the germs. The articles proposed are as apt to poison the patient as the microbe. Some would be even more destructive; and none can be as directly and completely brought into contact with parasitic life in the organs or in the blood, as surgeons bring them in conduct in their antiseptic treatment of wounds and injuries. But must we despair of conquering these germs? It is not too sanguine to anticipate that if their paramount importance be fully established, the means of their destruction will be found."

Dr. Ellzey, on "Antiseptics in Medicine and Surgery," says: "It is for the destruction of bacteria and their spores that we use antiseptics. So long as we are dealing with refuse materials and substances outside the living body, we may use disinfectants in any degree of concentration necessary to secure their efficiency, but within the living body, we are met by the limitation of the power of the organism to withstand the action of efficient germicides. Man cannot withstand the toxic action of any known reliable germicide in germicidal strength. Germicidal medicine, therefore, is beyond the possibilities of the present. We cannot kill bacteria or micrococci, still less can we kill the spores after they have gained access to the living body. Our therapeutic measures must have reference to the possibility of rendering the fluids and tissues more or less unfavorable for the development of pathogenic bacteria. It is not possible to make of the fluids and tissues of a man's body a germicidal pickle until after the man is dead."

At the expense of your indulgence, allow me to read you the following abstract from Garrigue's "Antiseptic Midwifery," on preventive measures in puerperal infection: It provides that the patient should

have a full bath at the beginning of labor; that enema of soap-suds be given; that hands of obstetrician be thoroughly scrubbed in soap and water, and afterwards in cor. sub. sol.; that hand and everything coming in contact with the genitals be previously immersed one minute in cor. sub. sol. 1-2000 before touching the patient; that buttocks, thighs and vagina be washed and scrubbed with sol. cor. sub. 1-2000; that no lubricant except carbolyzed glycerine 3 per cent. be used; that in common cases the fingers be not introduced inside the os; that the presenting part, as it opens the vulva, be covered with compress wrung out of cor. sub. sol. 1-2000; that the placenta be expressed by Crede's method; that the vaginal cavity, after delivery, be injected with warm sol. cor. sub. 1-2000, provided said cavity was at any time during or after delivery, entered by the hand; that uterine injections 1-4000 cor. sub. sol. be given, provided this cavity were entered by hand or instrument; that patient be washed in 1-2000 cor. sub. sol., binder and antiseptic occlusion dressing applied, and same be changed three times daily in private practice; that genitals be flooded with cor. sol. after urination and defecation; that no vaginal injection be given in normal cases."

All these antiseptic precautions, whose foundation is the germ-theory, and actually reduced to practice in some of the leading hospitals of the world, and endorsed by the leading spirits in medicine, surgery, obstetrics and gynecology, both in Europe and America, evidently mean much if they mean anything at all. Granted that antiseptics is more easily carried out in hospital than in private practice, does not the question arise: are the beneficiaries of the former any more entitled to the beneficence of a treatment which, during the past decade, has reduced the mortality rate 60 per cent., than are the landed and intelligent element of the latter? In our large humanitarian charity hospitals we find only too often an inappreciative, would-be lawless congregation of society's choicest slums, sirens, embryonic dynamiters and revolutionists, cared for in palatial environment, amid all the regal splendor, appointment and antisepticism possible in the reach of American munificence and modern science. This is all nice and proper, perhaps, and certainly is the highest tribute to our free and charitable institutions; but do we find commensurate antisepticism thus efficiently carried out in private practice among the veritable fosterers of the aforesaid charity institutions? If not, why not?

From a medico-legal standpoint, the practice founded on the germ-theory of disease contingences the general practitioner's most vital interests, and the question arises: are we longer justified in following the moderately successful beaten paths of the past, or shall we harmonize our treatment with the teachings of the germ-theory? In the event of death from puerperal septicæmia, *e. g.*, would the shrewd prosecution ask—after having enlightened the jury on how labor is conducted in well managed lying in hospitals:

"Doctor, before assuming charge of the case, did you see that your person and clothing, and that of all

your attendants (the 'granny women,' of course), were thoroughly bathed and scrubbed in soap and water, and afterward in a solution of cor. sub. of the strength of 1-2,000?" In nine cases out of ten the answer would be no.

"Doctor, did you bathe the patient, and wash the abdomen, buttocks, thighs and external genitals in the antiseptic solution aforesaid?" In ninety-nine cases out of a hundred the answer would be no.

"Doctor, before each digital examination did you immerse your hand in the solution cor. sub. and let it remain there for one minute?" How often would your answer be yes?

"Doctor, did you cover the presenting part on its emergence from the vulva with compresses of cor. sub.?"

"Doctor, after delivery, did you wash your patient in a solution of corrosive sublimate and apply an occlusion?"

"Now, doctor, you may describe the occlusion dressing to the Court and jury, and Prof. Garrigues, our expert, will tell us whether he uses that kind of occlusion in the lying-in hospital of which he has charge.

"Now, doctor, is it not a fact that you went directly from Sam. Smith's, where you were attending a case of phlegmonous erysipelas, and without changing your clothing or washing your hands made an examination of this woman, and told Susan Bangs here that it was a malpresentation, and turning would probably be necessary?"

"Doctor, do you recognize the erysipelatous contagium causative in the production of puerperal septicæmia?" Prof. Garrigues will enlighten the Court on this point."

These questions might be continued by hypothesis indefinitely to surgical cases, but for our purpose the point is fully developed; and at any rate the parturient canal furnishes all the conditions of an open wound, the one being as readily susceptible to infection as the other. If from no other motive than a self-conservative one, I argue that our only safety in medico-legal cases lies in rigid adherence to the principles of the germ-theory; for then, and then only, will we be able to avoid the opprobrium and penalty which the majesty of the law attaches to the dual crime of omission and commission.

Derogating from the concession made above for argument's sake—that antisepticism is more easily carried out in hospital than in private practice—I am convinced that the opposite lies within easy reach of each and every live practitioner in the country; and why? Because we, as a class of country practitioners, are surrounded by illimitable opportunities and advantages, as yet poorly developed, it is true, which are made possible in large general hospitals only by laborious detail which in itself divests the whole system of half its efficacy.

Let us notice the modern typical general hospital—with its elegant appointments, magnificent operating rooms, water supply, efficient school for training nurses, long list of competent physicians and surgeons, spacious amphitheatres, hosts of trained nurses faithful in the discharge of every duty, pavil-

ions and wards, strict antiseptic regulations—in fine, its hospital perfection. No human work is perfect. Did we consider its proximity to one of the greatest railroad centres of the world? Did we remember that only charity patients gain admission to its wards? Did we consider the physical depravity and moral degradation of 90 per cent. of its intramural invalids? Did we consider the gonorrhœal, syphilitic, scorbutic, consumptive and exanthematic effluvia that necessarily contaminate the air from such a medley congregation?

Divested of its superfluities; things that to it are necessities, but to the country practitioner superfluous, because here the necessity does not exist for battling against such hosts of pernicious germs; let the country physician carefully consider the analogous and essential points of difference between his quiet rural practice and that of his hospital contemporary, as foreshadowed in the preceding paragraph.

In the first place, gentlemen, you are all house physicians to hospitals not hemmed in by circumscribed architecture, whose dimensions are estimated by feet and inches, comprehending at most only a few acres of surface, and accommodating hundreds; but of hospitals miles in extent and composed of hundreds of pavilions, having few inmates; each patient separated from the others by miles of atmospheric oxygen, nature's most efficient antiseptic. The efficient artificial antiseptic you can use at pleasure. The class you deal with is the *élite* of society contaminated by a few dregs. Your water supply may always be first in quantity and quality.

It is a mistaken idea that hospital practitioners enjoy an autocratic authority over their patients not attainable in private practice. Your word must and will command both respect and obedience; otherwise you cannot meet with success. You can enforce cleanliness, and make quite efficient nurses from members of the family. This must all be preceded by much toil on your part; but still it is possible. Remoteness from great commercial and manufacturing centres, fresh air, pure water, a minimum of diseased patients in one place, unadulterated food, and milk especially, are things ever in your favor, and with difficulty attainable in large general hospitals. In hospitals the nurses are educated up to a keen appreciation of antiseptic precautions, and the physician's high authority. In the country these prerequisites do not come about spontaneously. They are creations of time, perseverance and popular education. Let us see how this latter is brought about.

An old adage says: "Make haste slowly," and it indicates the only rational plan of procedure in engraving on the minds of the masses the importance of antiseptic treatment. Until this shall have been accomplished, the orderly antisepticism in our well-regulated hospitals must continue to show us a smaller mortality rate than we, with all our boasted pure air, unadulterated milk and farcical germicides alone can accomplish. The medium ground of antiseptic perfection, then, lies between the "Slough of Despond" of the country practitioner, and the elevated plateaux of hospital practice.

The presentation and demonstration of any new

theory to the masses is a task not easy of accomplishment. In presenting the germ theory to the people, the laboriousness of the task must fall on the general practitioner. The masses cling with wonderful tenacity to the traditions, superstitions and doctrines of the past. Herein is the charlatan's ideal and most impregnable stronghold. You can convict the murderer, punish the trespasser, imprison for grand larceny, rape and seduction; but where can you find an advocate nimble enough of tongue to shake in the popular mind that innate and implicit confidence which mankind in general place in the salves, embrocations, poultices and nostras of traditional brilliancy? I believe we all have the infection, and are no more responsible therefor than are we for those features and idiosyncrasies which distinguish us as man from man.

Within the memory of you all, there occurred in a certain section of our country an epidemic of puerperal septicemia, during a time when glanders was prevailing among the horses of the same locality. Every parturient woman died at that time. The loving husbands day after day cared for their horses, with their suppurating submaxillaries, and also devoted time and attention to their parturient women. If the germ-theory had been advocated then it would have met the same opposition as now.

I once attended a patient in a condition of chronic blood-poisoning from the absorption of pus from a carious bone. I suggested removal of the carious bone, and a thorough bath. To the former he demurred on the ground that an old lady had told him "healing of such things would surely kill." Against the bath he urged the objection that thirty years ago, while yet in Germany, he had bathed, and as that made him sick he would never try the same expedient again.

Even in the time of Shakespeare men were egotistic on medical topics, and the same mania is ludicrously present to-day, even among people otherwise cultured. Who has not been talked full of cancer cures? Where is the layman who would not take issue with you on the rational treatment of fevers? Where is the divine who at some time of his career has not subscribed to the efficacy of some patent nostrum as potent as Lydia's or Warner's? Where is the teacher in our public schools who would say "call a physician," instead of "My grandmother learned from an Indian woman how to cure sore throat." Would an untutored boor presume to give you advice in adjudication? Granted the affirmative, would you institute proceedings on this fool's opinion before consulting a competent attorney? In the painful event of a monstrous carbuncle on your nose, would you not try everything from skunk oil rendered in full moon to turnip salve stirred three times with a forked stick, before consulting a competent physician?

Despair we need not, for analogy alone shows medicine to be not less progressive than her sister sciences. In polity the paternalistic and communistic ideas of the old world have given place to fine and orderly systems of government. In religion idols have been dethroned and Christianity preached to the heathen. The "lickin' and larnin'" of the past has

culminated in gigantic educational systems, the wonder and admiration of the age. Modern chemistry bears no facial resemblance to alchemy, her grandmother. The telegraph and telephone have made journalism a great popular educator. Jurisprudence, a delicate exotic plant at the beginning of this century, having gained new strength on American soil, now sends the strong arm of the law into the most remote provinces and territories.

Equally important advances have been made in every department of medicine. Anesthesia both local and general has wellnigh reached perfection, divesting formidable operations of all their pain and half their terror. In the hands of Neumann and others, electricity dissolves organic stricture of the urethra. The surgeon's knife invades the abdominal cavity, even the brain itself. Opium, calomel, jalap, quinia, and a number of other drugs used by the older practitioners will stand the test of time, modern discoveries making their virtues more valuable and less questionable. The cold bath in typhoid fever is destined to abandonment. Antipyrin enjoys great popular favor.

I would suggest that, as live and energetic practitioners in the country, we keep posted on the latest scientific medical thought, and be ready to accept the truth at all times. I consider it a duty we owe to our patrons and patients to give the sick the advantage of any hygienic regulation, any therapeutical agent, any meritorious medicament that may prolong life. The people must be educated up to modern ideas of prevention of disease, care of health, and the value of scientific investigations. Teach them that physicians understand the fullest details of physic as tradesmen understand their avocations. Teach them that food, water and air may, under certain conditions, be fertile sources of disease; solicit their co-operation in times of epidemics; gain their confidence, give them no time for grandmotherly lore, and I am sure they will respond with refreshing alacrity.

Hastily reviewing the germ theory of disease, the doctrine of *contagium vivum*, long ago enunciated by Pasteur and Tyndal and others, practically applied to surgery by Dr. Lister, to obstetrics, gynecology and general medicine by hosts of careful observers in Europe and America, its principles gradually finding bold expression in the efficacy of its achievements, assuming an antiseptic garb it stands open to-day to the keenest scientific criticism of the age. Its practice in surgery has wonderfully reduced death-rate from infectious germs, and the whole healing art is feeling the impact of the new treatment. Living germs cause disease. A thousand microscopes are identifying and classifying these germs; a thousand chemists are endeavoring to find agents capable of destroying these germs. Quinia destroys the bacillus malariae. Corrosive sublimate effectually protects open wounds. The final analysis of any new theory is made by the general practitioner. Do not become discouraged by the wayside, but lend a helping hand to science.

Leaving the present status of medicine, with all its imperfect diagnostic and therapeutic resources—of course ever grateful for whatever of merit and preci-

sion in diagnosis and treatment we now possess—let us pass in hasty review those instruments which separate medicine into ancient and modern. I refer to the clinical thermometer, the stethoscope, the ophthalmoscope, the laryngoscope, the microscope.

The stethoscope makes possible wellnigh exactitude in diagnosis in cardiac and pulmonary disorders. The clinical thermometer reduces fever to simplicity. The ophthalmoscope places the theory of inflammation on an immutable basis. The microscope, more than any other product of man's ingenuity, makes the etiology of disease both rational and scientific. On it, and it alone, rises that vast superstructure of recent times—the germ theory of disease and antiseptic treatment. The physician of the future must be as expert in the use of the microscope as is the physician of the present in the use of the stethoscope. The microscope reveals new worlds to science. Under its powerful lenses we behold a fertile field of microscopic vegetation, wonderfully diverse in structure, yet eloquent enough to call forth Linnaeus's spirit from the shades and demand for her multitudinous genera botanical classification.

In the near future, when anatomy, chemistry and physiology shall have completed a few more biological revolutions, lingual inspection and radial palpation will be quite insufficient data for procedure against bacilli with quinia and calomel. Our empiricism will elide into rationalism, and our present diagnostic crudities will remain on the therapeutic nomenclature of the future as ancient names preserve their heroic derivation. Greater precision in diagnosing disease will proportionately enhance prognosis. Future therapeutics is as yet a thing of embryonic magnitude. First must the whole field of empiric drugs be traversed in search of parasitocides. These latter, to be available, must meet two vital requirements: First, they must be innocuous to the fluids and solids of the body; second, they must devitalize germs and their spores or render the animal innocuous against their presence.

THE HYGIENE OF PHTHISIS.

*A Paper read before the Philadelphia County Medical Society,
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For twenty-four hundred years, and probably during all preceding ages, some of the best minds of the world has ever produced have studied and coped with phthisis, and, in spite of the accumulated knowledge of all those years, about one-fifteenth¹ of the human family falls a victim to it yearly. There is not a clime in which it does not exist, nor a period of life in which it does not occur. The rich and poor, the civilized and uncivilized, become its prey. Since it cannot be cured, it is but reasonable to try to prevent it, and much has been done in this direction during the last century. What percentage of deaths

was due to consumption in the days of Hippocrates cannot be known, but that it was large would appear from his words in speaking of a certain period, viz., that "consumption² was the most considerable of the diseases which then prevailed, and the only one which proved fatal to many persons." Writers upon the subject subsequent to Hippocrates are equally barren in statistics until about the seventeenth century. The first figures that I have met with are in a foot-note in Dr. Bateman's *Diseases of London*, in which a Dr. Heberden is quoted as saying "that³ in 1669 the deaths from consumption were to the whole as one to about six and two-tenths; in 1749 one to about five and five-tenths; in 1799 one to about three and eight tenths; in 1808 one to about three and six-tenths; and in 1818 one to about four and two-tenths." In the beginning of the present century Dr. Willan, in his statistics on the diseases of London, gives the percentage in his private practice as about one in three; and says that the proportion in the general mortality reports for the winter months at that time varied from one-third to one-half. In 1880 the percentage of deaths from phthisis in England was 9,141 in every 100,000, which indicates a marked improvement. This improvement is not due to a larger number of cures, but to a more successful prevention that follows in the wake of civilization.

It is scarcely disputed by any one at the present day that consumption is due to the bacillus tuberculosis. Concomitant with this doctrine is necessarily that of its contagiousness, and whoever accepts the one must accept the other. And why should it not be accepted? It is the reasonable doctrine, and one consistent with all modern teachings about disease. It is, moreover, the only doctrine that can explain all the phenomena of the disease without appealing to one's credulity, and upon the assumption of which we can ever hope to construct a barrier to the progress of the disease.

Heredity ought to be out of the question at the present day. It is an unreasonable theory, and at variance with all modern knowledge about the etiology of disease. Its complete eradication from the public mind is one of the first steps necessary in a sanitary crusade against phthisis. So long has it held sway, and so thoroughly has it been woven into our literature, into our ways of thinking, and even of acting, that it has actually become a remote cause of the disease. Men and women are daily dying victims of consumption because they have not the courage to escape its clutches. Their grandparents or parents, their uncles or aunts, or somebody in their families has died of the disease, and it is a foregone conclusion that some day, they will die of it too. They are tabooed by society as fore-ordained victims, they are refused life insurance on the slightest pretext, and are at a discount in the marriage market unless heavily endowed by purse or landed estate. Their lives are one continuous worry lest the disease overtake them, and yet they do nothing to avoid it, or the depressing influences which lead to

¹ In 1880 the percentage of deaths from phthisis in the United States was 12,679 in every 100,000, and in England 9,141 in every 100,000. Taking these two countries as a basis, we may assume that the world over, about 7 per cent of the deaths are due to phthisis.

² Francis Adams' translation, page 353.

³ Historical Survey of the Diseases of London, page 22. Thomas Bateman.

it. If they do finally succumb to the disease, their education and that of the public have been factors in its production.

Somewhat akin and often confounded with heredity is the doctrine of predisposition. That some families are more apt to develop certain diseases than others is beyond dispute. What this predisposition consists in, and whether dependent upon the blood, the nerves, or tissues, is as yet one of the hidden secrets of nature. It is certain, however, that it can be transmitted for generations, and that, like complexion and features, it may go to only certain members of a family, may skip a generation or two and reappear, or may disappear entirely. It sometimes goes with one or the other sex, and sometimes accompanies certain complexions and features. Whilst it often exhausts itself by the laws of survival, it may also be generated *de novo* by the modes of life and habits of the parents. The tight-lacing girl, the pale-faced, dissipated young man, the overworked store girl and factory hand, the tea-drinking, bibbling servant girl, the drunken father, the half-starved, badly clothed mother—these are some of the progenitors of predispositions of phthisis.

So much in brief about the theories on the etiology of consumption. Their consideration has been necessary in order to study intelligibly the means for its prevention.

Both in theory and practice we find that consumption, though contagious, is but mildly so. This is, in my estimation, not so much due to the inefficiency of the bacillus tuberculosis as to the withstanding power of the lungs of most people. The bacillus tuberculosis never finds a nidus in a healthy lung—by healthy, I mean not only freedom from pathological change, but a strictly physiological condition in which every function is properly performed. Like the brain, I believe the lungs may be functionally abnormal, and yet there be no pathological change discoverable. There is a very close relationship between this functional abnormality of the lungs and the digestive apparatus, and, in a sequential way, the whole nutritive system. It is upon the stomach, then, almost as much as upon the lungs, that much depends in the prevention of phthisis. The stomach is usually the first traitor in the human economy. Through its derangement many diseases gain entrance into the body. When the stomach fails to perform its work, the lungs will soon do the same. A vicious circle is established, and they mutually derange each other. Malnutrition follows, and the lungs become a proper soil for the bacillus tuberculosis. Every care should therefore be taken to keep the stomach healthy, and to do this a sufficient and proper supply of food is necessary. Too much food is as injurious as too little, and improper food worse than either. When the stomach is filled with indigestible food, nutrition is not only withheld, but the stomach is unfitted for the proper performance of its work for some time thereafter.

It is generally in overfed and improperly fed people that we have what is called galloping consumption. Though apparently well nourished, their entire appearance is suggestive of too much foreign

matter in the blood. It is from this class of people that the mortality list from consumption is kept so high in America, and it is chiefly the foreign element in our population which constitutes the class. The deaths from consumption in the United States are nearly twice as numerous among the foreign population and their children as among the children of the native born. In Rhode Island, according to the health reports of that State for 1880, one person in every 450 of native parentage dies of consumption, while one in every 280 of foreign parentage dies of the disease. According to the United States census reports for 1880, out of every 1,000,000 deaths, 242,812 males and 302,046 females die of consumption. This represents all nationalities and colors. Among the colored race every million deaths represent 248,170 males and 326,973 females as having died of consumption. Among people of Irish parentage 309,507 males and 375,636 females die of consumption to every million deaths; and among people of German parentage the victims of the disease number 249,498 males and 254,958 females to every million deaths. It will be seen that the largest percentage of deaths from the disease is among Irish immigrants and their children. This is usually ascribed to the change in climate. Ireland has a much damper climate than America, and therefore one better suited to the development of phthisis. The real cause for the larger mortality from consumption among foreigners, and especially among the Irish, is the change in diet. At home they have been accustomed to a plain, healthy diet, and when they come to this country they at once take to the varied heavy diet of Americans. Where they have eaten little meat at home, they eat it in profusion here. Where they have drank good milk and eaten vegetables at home, they drink teas and coffees and eat spiced foods here. They soon become thorough Americans in their stomachs, and even outdo the natives. The consequences are indigestion, malnutrition, tuberculosis. The German, though frequently pursuing a similar course, is often spared by his characteristic thrift and economy. He partakes more sparingly of the good things that come in his way, because of his anxiety to prepare for a rainy day. His fondness for beer, a beverage that he manages to secure wherever he goes, may likewise have some influence in shielding him against phthisis.

Sufficient fresh air, sufficient food, and sufficient rest and sleep are the watch-dogs of health, and where they are on the alert consumption can never enter. Bacilli tuberculosis may permeate the air, but they can do no harm. Could civilization reach such a stage of perfection as to make it possible for every human being to have all these, it would be in the power of everyone to avoid phthisis. Such a condition of things is, however, impracticable. It therefore becomes necessary not only to deprive the bacillus tuberculosis of its proper soil, but also to destroy the bacillus. This function belongs as well to the State as to the individual. Modern governments are beginning to appreciate the importance of preserving the health of their people, and are everywhere establishing health boards. As yet, however,

they do not go far enough. Medical science has grown beyond the mere art of prescribing remedies; it has become a science of protecting man against disease and enabling him to attain his three score and ten. As government exists for the good of society, it ought to avail itself more extensively of so powerful a means to its end. The medical profession should be represented in our government. There should be a *Department of Medicine*, as there is a *Department of Agriculture*, of *Justice*, of *Finance*, etc. Surely human lives are as valuable as those of dumb brutes, and we want protection as much against the invisible foes which threaten our health as the visible ones which threaten our hearths. Unfortunately, public sentiment has not yet been educated to appreciate sufficiently the importance and benefit of sanitary measures, to make such a thing practicable. Did such a department exist, and did physicians in good standing and with scientific attainments occasionally enter the field of practical politics, and allow themselves to be returned to city councils and State and National legislatures, sanitary science might shed its light upon legislation, and many existing hygienic evils be remedied; many social and commercial customs and practices which are daily generating predispositions to consumption by the thousands might be corrected. Plainer living would come through proper instruction upon the subject and the instillation of the necessary sentiment in our schools. Not only ought children to be taught what to eat and drink, but also how to prepare their food and what quantity they can take consistent with health. Nor should instruction upon the proper adaptation of food to the time of life be overlooked. Many children are already dyspeptic when their school days begin, and in their cases the benefit of instruction could only accrue to the second generation. The depressing influences of private vices in children and young people could often be averted by early instruction of the proper kind. Such instruction should, of course, come through the parents, but parents are themselves frequently devoid of the proper knowledge, hence the government might supply it to them by the free distribution of appropriate books. How many social and moral evils might be warded off were the proper knowledge brought to the thousands who would gladly avail themselves of it, were it within their reach!

Legislation might in a measure protect the weak against the oppression of the strong. One needs but visit the parts of large cities where the poor live, and note the crowded, filthy courts, alleys and tenement houses; or take a stroll through a badly ventilated factory or retail store in which the employes are compelled to work long hours in unhealthy positions, and with the most wretched accommodations for the ordinary demands of nature; or examine some of the articles of food and drink that are openly sold in shops and on the streets, to understand what could be done in the way of sanitary science by wise legislation. The remedying of such wrongs and oppressions would very much lessen the mortality from consumption by withdrawing the soil necessary for

its development. But all this is mere speculation of what we may hope will take place in the future. For the present we must content ourselves with discussing the weapons against the bacillus tuberculosis, which governments can use as they are now constituted.

The usual methods employed by our boards of health for combating disease are isolation and disinfection. Against consumption, isolation if it were even practicable, would be both useless and cruel. It is a question in my mind whether the existence of the bacillus tuberculosis is solely for the destruction of human lungs! In view of the universality of phthisis, it is not entirely a matter of fancy to suppose that the parasitic life of the bacillus in man is incidental, and that it plays some useful rôle in the great chain of transition between organic and inorganic matter. It seems to be everywhere and to be wafted about by the air. Isolation could therefore not confine it, nor afford protection. The only benefit that could be derived from it, would be the withdrawal of the relatives of patients from an atmosphere saturated with the germs of the disease, and their protection against contamination by the sputa. This would be a poor return for the dreadful inhumanity of separating the poor victims for years from their relatives. The same results can moreover be attained without isolation by disinfection. With well equipped thorough boards of health and properly instructed laity, satisfactory protection could be secured to those who by family ties or otherwise are compelled to live in the same house with the afflicted. The house, and especially the room, in which the patient sleeps ought to be frequently disinfected with some suitable germicide, and particular care should be taken to disinfect the sputa. For the former purpose sulphur may be burnt or a spray of a strong solution of carbolic acid be used, and for the latter carbolic acid of corrosive sublimate solution be placed in the vessel that receives the sputa. To carry out these measures in practice, consumption would have to be placed upon the list of contagious diseases returnable to the board of health, and the present force of existing boards of health would have to be largely augmented. The beneficial results, however, would be ample compensation for the inconvenience and expense. That there would be a marked decrease in the mortality from phthisis I have not the slightest doubt. Better opportunities, too, would be afforded to study the disease, as more reliable reports would be made and fuller statistics be gathered.

Health boards should, moreover, help to disseminate proper knowledge upon the subject. If ignorance is the parent of vice, it is certainly the grandparent of disease. It is a matter of daily occurrence that people who have consumption, and who are constantly expectorating infectious matter, fill positions in which they must necessarily contaminate the clothing, food, and drink of others. There are consumptive tailors and dressmakers, consumptive cooks and waiters, consumptive candy-makers, consumptive bakers, consumptives indeed in every calling of life. These people do not sus-

pect for a moment that they are spreading the disease, and take no precaution against doing so. They are often poor people who have to work for their living, and who, as long as life remains in them, have to earn its support. They do not even know that they have consumption, or at least they persuade themselves that they have not got it. They expectorate on the public highways, in church, at the theatre, at their places of business or work—in short anywhere and everywhere that is convenient, and the sputa dry up and are carried into the lungs of others, or find their way into food and drink. First of all, people ought to be made thoroughly familiar with the infectiousness of the sputa, and ought to be taught how to disinfect them. This knowledge should come from the government through the boards of health. Physicians and public teachers can do much toward creating a proper sentiment, but they cannot convey the instructions in an authoritative an effective way. In the next place, no consumptive should be employed in any capacity in which he may contaminate the clothing, food, or drink of others. To obviate hardships in such cases, the government should make provision out of the public treasury for the maintenance of such people as we have to give up their means of livelihood for the public good. Whether this be done by pension or by offering an asylum must remain for political economists to decide. No hesitancy is felt in spending millions for the resentment of an insult to our national honor, or for some commercial advantage: Why should not something be expended in the protection of our people against the ravages of a disease which, in the United States, carries off nearly a hundred thousand people annually? Small remedies will avail nothing with so great an evil. Our government should act, and act with gigantic strides.

As regards individual effort to prevent the spread of consumption, it must necessarily be confined almost entirely to those who, by predisposition, are likely to develop it. They should not only lead strictly hygienic lives in every particular, but should avoid everything that might even remotely lead to the disease, and avail themselves of every weapon against it. The nearer they follow Nature in its dictates as to how to live, the better. They must not revel in excess, turn night into day, overload their stomachs, overtax their brains, strain their physical endurance, and play havoc with their constitutions generally, as their more favored brothers and sisters do with impunity. They must lead correct, orderly lives, and be ever on the alert that their physical condition may not fall below par. As regards the weapons to be used against the disease, it may be well to pass some of them in review.

Climate has always been looked upon as an important factor in the production and prevention of consumption. Its importance, however, seems to me to have been much exaggerated. A non-porous soil is undoubtedly a contributing agent to the production of consumption, but not more so than of many other diseases. Consumption occurs in every country and every climate on earth, being modified

in prevalence by the various modes of life. Vicissitudes of climate have really little to do with the disease. Those people who are most exposed to the weather seldom die of consumption, whilst those whose lives keep them indoors are its most frequent victims. Women, for example, die much more frequently of the disease than men. Nor does warmth or cold or altitude exert much influence. The colored people, who live largely in the warmer portions of the United States, have a higher mortality rate from consumption than the white people, the majority of whom live in the colder portions. In short, consumption prevails everywhere, no matter what the climate, where people are compelled, by the demands of society, to crowd together and live much indoors. The practical lesson to be drawn from these facts is, that persons who are predisposed to consumption by reason of the lives of their forefathers, or the peculiar circumstances surrounding their childhood, ought to adopt a calling in life which keeps them out of doors and away from cities.

There is a popular belief that alcoholic drinks are powerful preventatives of consumption. This, like all popular beliefs and superstitions, has undoubtedly some truth for its foundation. But, as is usual with the bastard progeny of desire, this grain of truth has grown into such immense proportions as to have become the stumbling block of many. No one that has carefully studied consumption can have a doubt that their exists some relation between its production and the non-assimilation of hydrocarbons. Very many cases of phthisis have traces of sugar in the urine, and probably all of them have indigestion of heat-producing food. These symptoms frequently exist for months before cough and discernible local congestion set in. As beverages containing a small amount of alcohol present a most readily assimilating form of hydrocarbons, they no doubt, when properly used, buoy up the weakened system in its struggle against the bacillus tuberculosis, and often enable it to gain the mastery. But what is good in moderation is always hurtful in excess, and in this instance precipitates the very evil it might otherwise prevent. Excess of alcohol and the adulterating ingredients in alcoholic beverages derange the stomach, and thus by interfering with nutrition predispose to consumption. In this way a long life of hard drinking sometimes ends in phthisis.

A very noticeable fact in the mortality statistics of consumption is the predominance of females among its victims. This is in a measure due to the indoor life of women, but not altogether. The many accidents and diseases incidental to the physiological life of women greatly predispose to consumption. These are, however, nearly all of an avoidable character, and have their fountain-head in carelessness during the menstrual period and during the puerperium. Women should be taught from childhood that these are sacred epochs, and that during them nature demands rest and especial care. The Semitic six weeks' rest after childbirth is true to nature, and should be observed by every woman who becomes a mother. Lactation frequently predisposes to consumption, but usually in those cases which have made bad re-

coveries after confinement, and are in want of the proper food and care which are necessary for a nursing woman.

Pulmonary gymnastics are powerful weapons against phthisis, and should be especially used by those who are unable to extricate themselves from the unhygienic surroundings and circumstances in which their necessities have placed them. Though the use of a gymnasium is very desirable for practising these, it is not necessary. The principle involved is ventilating the unused air-cells, and any combination of forced respiratory movements that will thoroughly inflate the lungs will accomplish this. Gradually filling the lungs with air whilst retracting the shoulders and extending the chest or taking a deep inspiration whilst extending the arms above the head and expiring whilst placing them parallel with the body, are two simple exercises which do all that is necessary and can be taken without interfering with the most busy life or causing fatigue. A habit should be made of thus ventilating the unused portions of the lungs, and it should be done at times when the purest air can be secured. The most practical germicide that we as yet know of for the bacillus tuberculosis is fresh air, or, more correctly speaking, it furnishes the least favorable habitat for its development. A better oxygenation of the blood is, moreover, secured by such exercises, the circulation is stimulated, and, indirectly, the digestion and assimilation improved.

As regards the hygiene of phthisis, when the disease is once established, it is based upon the same principles as that for its prevention. Sufficient nourishing food, and sufficient fresh air, these are the *sine qua non*. The prime object in every case of phthisis should be to secure a good digestion and assimilation. Everything that is done should be done with this object in view. Good, nourishing and easily digested food should be taken in abundance, and every care taken that the stomach be not deranged by indiscretions in eating and drinking, or by overloading. As soon as the body begins to nourish, the lung trouble will improve. As an aid to digestion outdoor exercise is very important. Without it the system cannot be made to use up a large quantity of food. Inasmuch as warm climates offer greater inducements to keep invalids out of doors, and make bed-room ventilation a little more agreeable, they are highly commendable to consumptives; but they are by no means essential to their well-being. A cold climate will do just as well if the patient has the courage to endure the discomforts entailed by it. It is much better that a consumptive have home comforts in the worst climate in the world, than that he be compelled to undergo the tortures of boarding-house or fourth-class hotel life at a health resort. In all warm climates the houses are built for warm weather use, and no provision is made for the stray blizzard that occasionally comes along. Though the temperature may be very equable from day to day, there is always a marked variation between day and night. In consequence of the rapid radiation of heat the houses become cool and damp during the night, against which there is

likewise no provision, except in first class modern hotels. In many places suitable food is difficult to obtain even at the most extravagant prices. All in all, the average person who has consumption had better remain at home, unless his home is in a large city, and then he should go into the neighboring country, where he can secure home comforts and plenty of suitable food. Let him dress warm, take outdoor exercise whenever he can, eat plenty of light, nourishing food, take ample rest and sleep, and he will get along much better in his native heath than he would with small means in the most model consumption climate.

It is important that the entire body be warmly clad in cold weather. Either silk or woollen clothing ought to be worn next to the skin. The circulation should be kept equable throughout the entire body, hence the extremities ought never to be let get cold. When the feet get cold the lungs become congested. Rubbing the body with a coarse towel has a good effect in equalizing the circulation. The ancients recognized this fact, and laid stress on it. "Balneum alienum est," says Celsus. Sponge baths, if carefully taken, will do good. They should, however, be taken in a warm room, and followed by a rest.

Sea voyages used to be highly recommended in the early days of medicine, and theoretically, at least, ought to be beneficial in the first stages of the disease. The ocean offers a pure atmosphere, and frequently the salt air stimulates appetite and improves digestion. In the advanced stages of the disease they are, however, impracticable, and should never be attempted.

Gypsy life, or traveling through the country by easy stages and camping out, is most beneficial to consumptives, even in advanced stages. The ancients had their patients carried from place to place in chairs. In the territories most remarkable cures are brought about by this mode of living. Persons unable to walk are hauled in wagons on improvised beds, and it is astonishing what a revivifying effect constant exposure in the open air has.

But, as said in the beginning of this paper, when consumption is once established it is rarely cured, and though much can be done to ameliorate the condition of the consumptive, the most important duty of the medical profession, at the present day, is to lend its aid in bringing about such a change in public and private hygiene as to give the disease less chance for development.

Civilization is the keystone on which the barrier to the progress of phthisis must be built; but it must be a high order of civilization, a civilization in which charity for our fellow-man is the guiding-star—which teaches not only how to live, but how to let others live—which banishes want from the earth, gives everybody sufficient breathing space, and removes the foot of monopoly from the neck of the working-man and the goad from his side; which will remove morbid ideas about dress, society, customs, and education, and banish all vice and excess from the world. So long as the "summum bonum" of man's existence is to live at ease, gratifying every desire, and tower head and shoulders above everybody else

importance; so long as one half of the human race must be without the necessities of life in order that the other half may revel in excess; so long as crowded tenement houses must tower in the sky in order to let palaces spread out on the surface; so long as soulless corporations can drive man to do more than a whole day's work for half a day's pay, and under circumstances and surroundings which are in conflict with every rule of health; so long as the rich lead and the poor follow in health ruining fashions and customs; so long as children have their minds made morbid and their bodies ill developed by school-cramming processes; so long, indeed, will consumption continue to be epidemic, no matter what progress scientific medicine may make.

MEDICAL PROGRESS.

THE CARLSBAD "CURE."—DOCENS DR. JAWORSKI, of Cracow, gives in the *Przegląd Lekarski*, under the above title, some interesting details respecting the influence of the springs of Carlsbad on diseases of the stomach. The author first emphasizes the fact that the majority of gastric disorders are due to an increased activity of digestion, and not, as had long been thought, to impairment of the secreting power of the gastric mucous membrane of the stomach, or to complete destruction of the digestive action. He refers to the publications of Reichmann in 1882, in which increased secretion of the gastric juice was said to be the cause of the disease, and also refers to researches on the disease of the stomach by Jaworski, Gluzinski, and others, which illustrated this statement by several facts. Further investigations had shown that, in ulcerations of the stomach, hydrochloric acid was increased, and that hæmatemesis, as a result of *ulcus ventriculi*, was observed when the secretion of hydrochloric acid had risen to the highest point. The diminution of the secreting power of the stomach greatly lessened the danger of gastric ulcer. The springs of Carlsbad had been said to stimulate the secretion of the stomach, and to quicken the digestion. Dr. Jaworski, however, observed that, although the water and the dried salts of Carlsbad increased the secretion of the gastric mucous membrane when given in small doses, when used in large doses, or when taken for a long time, they lessened the secretion both of acids and pepsine, so that, after prolonged use of these remedies, the secretion was completely arrested without any great disturbances in the mechanism of the stomach. Out of 232 cases which Dr. Jaworski had examined, in 156 he found the cause of the gastric disorder to be increased secretion of hydrochloric acid. The good effect of the springs of Carlsbad in almost all diseases of the stomach was thus explained. With reference to the indications for the use of the waters, Dr. Jaworski, as the result of numerous internal examinations of the stomach, distinguished the following stages and forms of gastric diseases. The use of the springs of Carlsbad is indicated: 1. In increased secretion of

the gastric acids during the time of digestion only (*hypersecretio digestiva transitoria*). In such cases the use of the Carlsbad waters lessens the sensibility of the mucous membrane of the stomach. 2. In increased secretion of the gastric acids when the stomach is empty (*hypersecretio hyperacida continua simplex*). When the Carlsbad waters are used in such cases in small quantities, not only the normal but the functional and structural conditions were re-established. 3. (a) In the third stage, which had been called by Jaworski *catarrhus acidus et gastrorrhoia hyperacida continua*, where the secretion of hydr. chloric acid had attained the highest degree, so that the acidity of the non-digesting stomach was scarcely less than it is at the period of active digestion. In these cases, disturbances of the chemismus of digestion and anatomical changes of the glandular apparatus, and even in the muscular layer of the stomach, were already present. The use of the Carlsbad water in large doses and for a long time, will diminish the acid secretion to a high degree, and produce a considerable improvement in the disease; (b) As, according to all the experimental results which had been hitherto obtained, the round ulcer of the stomach (*ulcus ventriculi rotundum*) was attended with the acid catarrh just mentioned, and was probably produced by it, the favorable effect of Carlsbad water in cases of gastric ulcer was satisfactorily accounted for. 4. Besides the continual increase of the acid secretion, there was still another abnormal and periodic hypersecretion of hydrochloric acid of nervous origin. The difference between these forms consisted in this, that in the former the increased acidity was met with at each internal examination, whereas in the nervous form the increased acidity was only occasionally observed. In this latter the Carlsbad water might be advantageously employed. 5. In certain neuroses, sensory (*hyperæsthesia, cardialgia*) as well as motory (*crémittus nervosus*), Carlsbad water is not less useful. Dr. Jaworski does not remember any single case in which the water had been vomited, and this was also true of cases in which no other liquids, and even no medicament, could be retained in the stomach. In such cases the good result was to be ascribed to the mild effect of the warm and diluted alkaline solution and the free carbonic acid on the mucous membrane of the stomach. The use of the waters of Carlsbad is contraindicated in: 1. The fourth stage of the secretory debility (*insufficiencia secretionis acidæ*), when the acid secretion was insufficient even during digestion. 2. The last stage, which had been called *catarrhus mucosus*, when hydrochloric acid and sometimes even pepsine was quite absent even during digestion. Even in these cases it was worth trying whether the glandular apparatus could not be irritated to secretion by small quantities of Carlsbad water. Dr. Jaworski further points out that the effect of Carlsbad water was not only a symptomatic one, as believed by many, that it not only neutralized the hyperacidity of the gastric contents, but that it also produced permanent anatomical and functional changes in the glandular apparatus, by which the power of secreting hydrochloric acid was diminished, and thus a per-

manent benefit obtained. Whether Carlsbad cure was indicated in a given case should be learned from the internal examination of the stomach. During the time the water was used the progress of the case must be determined from time to time by internal examinations. It had been proved by several experiments that a too protracted use of the Carlsbad water and salt finally led to complete loss of power of secreting hydrochloric acid. On the other hand, it was a known fact that there was no strict causal connection between the subjective disturbances and the objective changes in the stomach, so that no sure conclusion could be drawn from the former as to the condition of the stomach. It was therefore absolutely necessary to examine the contents of the stomach chemically from time to time in order to obtain a true idea as to its secreting power, so that it might not be completely destroyed. It should also be borne in mind that atrophy of the glandular apparatus predisposed to the development of neoplasms in the stomach. Korczynski and Jaworski had shown (*Klinische Befunde bei Ulcus Carcinoma und Magenblutungen*, Berlin, 1887) by statistics that malignant neoplasms of the stomach coincided with the above-mentioned condition of mucous catarrh, and that there was probably a more or less close causal relation between them.—*British Medical Journal*, January 14, 1888.†

BLIND, SIXTY YEARS; IRIDECTOMY; RESTORED TO SIGHT; GOOD COLOR PERCEPTION.—DR. DAVID McKEOWN reports the following case:

Edward C., æt. 63, a fiddler, had, when I saw him in August, 1883, been blind upwards of sixty years. When 1½ year old he lost the sight of both eyes from an attack of small-pox. The right eye had not perception of light, but the projection of the left was good. There was a dense central opacity extending into the upper half of the left cornea, and the iris was adherent all round to the margin of the opacity. I performed an iridectomy opposite the transparent cornea above, the only place available for such a purpose. I showed the patient in the Ophthalmological Section at the meeting of the British Medical Association held in Belfast in 1884, *i. e.*, about a year after operation. The condition then was: The cornea opposite the artificial pupil was a little milky; the use of the eye was attended with some difficulty—the pupil being above, and the eye before operation having had a somewhat upward position, a considerable effort on the part of the inferior rectus was required (a tenotomy of the superior rectus, alone or combined with the advancement of the inferior rectus, would doubtless be advantageous). The presence or absence of the lens could not be determined; the result of a trial with glasses was practically *nil*; the vision which he had gained by the operation enabled him, when in the streets, to dispense with the stick which, before the operation, was a necessity; he could count objects of 1½ line in diameter when about a line distant from each other; he recognized comparatively small differences in size. His color-perception was remarkably good; he distinguished not only the well defined colors, but also

different shades of the same color, sometimes even when these differences were not very marked. His color education was very rapid. When I first spoke to him on the subject I found that he was pretty familiar with green, blue and red. Some patients in hospital had given him instruction. He came to know green by examining a quilt of that color which was upon his bed, blue by inspecting a blue and white striped shirt which he wore, and red from seeing a lining of that color in a hat. He afterwards came to know yellow, brown, etc., from having these colors shown to him a few times. The coins (involving shape, size and color) were soon mastered.

This case is probably unique, seeing the early age (1½ year) at which vision was lost, the very prolonged period (upwards of sixty years) of blindness, and the extremely gratifying results of the operation; and it has an important bearing upon some interesting questions regarding the conditions under which the functions of the retina may be lost or preserved, and the recognition of form, estimation of distance, etc.—*The Lancet*, January 7, 1888.

EVERTED DORSAL DISLOCATION OF THE HIP.—At the meeting of the New York Surgical Society, on Dec. 28, DR. LEWIS STIMSON reported a case of this rare injury, which occurred in a woman aged 55, who was knocked down by a horse car. The (right) injured lower extremity was parallel with the other and with the long axis of the trunk, and was so far everted that the foot rested on its outer border as the patient lay in bed. The limb could be adducted and flexed, but could not be abducted or rotated inward. There was shortening of an inch and three-quarters. The trochanter was prominent, and was elevated; the head of the femur could be distinctly felt below and rather to the outer side of the anterior superior spinous process of the ilium. By flexing and abducting the limb, and then rotating it inward, the dislocation was easily transformed into the common dorsal variety. On increasing the flexion to right angle, abducting and rotating outward while lifting, the original form was reproduced. After two or three such failures reduction was made with a distinct sound by maintaining the inward rotation, and after flexion to a right angle, and slight abduction, lifting the limb steadily and with considerable force. During the night following reduction the dislocation recurred; it was again reduced, and the limb was kept in a position of abduction by traction with a five-pound weight. It again recurred, was reduced, and recurred; finally the bone was kept in place by traction with a fifteen-pound weight, a broad bandage being drawn tightly around both hips. No crepitus was felt during the many manipulations, and each reduction was accompanied by a distinctly audible snap. The facility with which recurrence took place suggested in the absence of fracture of the acetabulum, that a portion of the capsule remained interposed between the articular surfaces. The patient had in addition to the dislocation, a fracture of the humerus and of two ribs, a laceration of the pericæum, and an old cavity in each lung.—*New York Medical Journal*, January 21, 1888.

ANTISEPTIC LOZENGES IN LUNG DISEASES.—DR. DURANT describes the effect of Dr. Albin Meunier's antiseptic lozenges in the treatment of pulmonary tuberculosis and other affections of the respiratory organs. The discovery of the pathogenic microbe of these affections suggested that they might be completely cured if an efficient agent could be found to destroy the microbe, or render the organism impervious to its attacks. The antiseptic treatment of affections of the respiratory organs was a method in accordance with the most recent scientific theories; its practical application was, however, rendered almost impossible for the following reason. It would only prove effectual if the antiseptic remedies were administered in large quantities; these in strong doses exercised an injurious and even dangerous action upon the cells of the organism. Dr. Albin Meunier has discovered a means by which antiseptic remedies which destroy the pathogenic microbe of pulmonary phthisis and other broncho-pulmonary affections may be administered in active doses without any danger whatever to the organism. Dr. Meunier's antiseptic lozenges are composed of carbolic acid, eucalyptol, iodoform, creasote, menthol, etc.; 1 to 3 lozenges are given at each meal. The beneficial effects of volatile essences in the treatment of broncho-pulmonary affections have been demonstrated by numerous observations. They arrest the evolution of the bacillus, modify the character of the secretions, and diminish the fits of coughing. Dr. Meunier's lozenges are rapidly absorbed, and the organism is quickly and thoroughly impregnated with the antiseptic substances. Their odor is observed in the breath, in the urine and perspiration of the patient shortly after the lozenges have been swallowed. Owing to the purity of the substances employed, this treatment never disturbs the digestion. The action is prompt and effectual; tonics and strengthening medicines may be combined with this treatment. Under it the patients increase in weight, diarrhoea and night-sweats disappear, and the local symptoms are modified.—*L'Union Médicale*, December 11, 1887.

GUIACOL AS A SUBSTITUTE FOR CREASOTE IN PHTHISIS.—DR. H. SAHLI, of Berne, writing on the treatment of phthisis by creasote, remarks that creasote, by which is meant that prepared from the tar obtained by the destructive distillation of beech wood, is a complex substance, the constituents of which vary considerably in different samples, and that it is surely desirable to use for therapeutical purposes some simple substance of known composition. He finds that in the beech creasote, as prescribed in the Swiss Pharmacopœia, the largest constituent is guaiacol, the methyl ether of pyro-catechin, $\text{OH.C}_6\text{H}_3\text{.OCH}_3$, which constitutes from 60 to 90 per cent. of the whole, the rest being chiefly made up of creasol, the mono-methyl ether of homo pyro-catechin, $\text{OH.C}_6\text{H}_3\text{[CH}_3\text{].OCH}_3$. Guaiacol being the chief constituent of creasote, Dr. Sahli prescribed it in cases of phthisis, and found that it had an excellent effect in moderating the cough, making expectoration easier, frequently diminishing the secretion, and improving the patient's appetite

and general condition. Some who were confined to bed and suffering from a considerable degree of pyrexia were unable to retain the medicine, and vomited it. In some cases, too, it brought on diarrhoea. On the whole, however, Dr. Sahli was well satisfied with the guaiacol as a substitute for creasote. It is a colorless highly refracting liquid, soluble in alcohol, ether, and fat oils, but only slightly so in water. The alcoholic solution gives with perchloride of iron an emerald green coloration. The taste and odor of guaiacol are more agreeable than those of creasote. As solutions of guaiacol deposit resinous substances when exposed to light, they should be kept in colored glass bottles. One or two parts of guaiacol may be dissolved in 180 parts of water and 20 of spirit. One or two teaspoonfuls of this may be ordered in a glass of water two or three times a day after meals, or the guaiacol may be dissolved in cod-liver oil, which almost completely disguises its smell. In this way larger doses can be taken than when the solution in water is prescribed. The price of guaiacol does not seem to be very much higher than that of creasote.—*Lancet*, Dec. 24, 1887.

TREPHINING IN MENINGEAL HÆMORRHAGE.—A female patient, aged 20, was admitted under the care of MR. CROFT, in St. Thomas' Hospital, about midnight on Dec. 11, in a semi-comatose condition. She was supposed to have been knocked down and kicked by a horse. There was a scalp wound, not leading down to the bone, behind and below the left parietal eminence. There was no evidence of fracture. During the night she passed into a state of absolute coma, and in the morning had complete paralysis of the right arm and leg, but not of the face. Mr. Croft trephined in the situation of the wound, removing about two ounces and a half of somewhat granular clot, which was spread out for some distance between the dura mater and the bone. The hæmorrhage was from some vessels into the dura mater (probably posterior branches of the middle meningeal), and could only be arrested by means of pressure. About six hours later the power of movement returned in the right side, and her condition gradually improved. She spoke for the first time after the injury on the 13th. Although not yet recovered, she is still restless at times, and impatient of control; there is no paralysis, the wound is quite aseptic and healing, and the improvement continuous. A severe contusion of the groin was, however, followed by sloughing and cellulitis, for which incisions were required.—*Lancet*, December 24, 1887.

ANTIPIRYN AS A UTERINE SEDATIVE.—M. H. CHOUPE has already called attention to the good effects of antipyrin in uterine pains after parturition or in dysmenorrhœa. In proof of this he relates the following case: A woman, æt. 35, was suffering from a large myoma situated in the posterior wall of the uterus, accompanied by copious hæmorrhage, which reappeared after menstruation. Ergot checked the hæmorrhage, but caused such severe uterine pains that it had to be discontinued. Large doses of morphine were administered; these caused the pains to

disappear, but at the same time the uterine contraction was relaxed and hæmorrhage reappeared. Ergot was again administered with similar results. The attacks of uterine pain lasted two or three hours. M. Chouppé then had recourse to antipyrin. An injection, containing 30 grains of antipyrin, was administered. At the end of twenty minutes the pains disappeared. M. Chouppé then tried the following experiment: An injection of antipyrin was given half an hour before the dose of ergot. The patient experienced no pain, although there was active uterine contraction; hæmorrhage was arrested. M. Chouppé concludes that antipyrin relieves the pain caused by uterine contraction which is produced by ergot without diminishing the contraction. He believes that it acts upon the spinal cord, and might be administered with advantage during parturition to women of irritable temperament.—*British Medical Journal*, December 17, 1887.

EXTIRPATION OF THE SCAPULA; REPRODUCTION OF BONE.—A. CECI reports this case. The patient had a soft chancre and inflammatory phimosis and recent gonorrhœal stricture. Five days after circumcision he was attacked with acute osteomyelitis of the left scapula, on account of which the bone was entirely extirpated about a month after the beginning of the disease. An L incision was made, the angle being on the collum scapulae, the short limb along the spine. The operation was then made subperiosteal. Recovery was rapid.

This makes a total of 47 total extirpations of the scapula; and of 45 cases in which the results are known 9, or 20 per cent. have died. Ceci and other authors draw the following conclusions: The results of the operation depend upon its being performed subperiosteally, upon the age and strength of the patient, and upon the manner in which the after treatment is carried out. It is very necessary to make an angular incision along the spinous process and the inner border of the scapula; the loosening up of the periosteum should begin on the dorsal surface, and then the acromion process, the coracoid and glenoid should be freed. The portions of the deltoid muscle must be united by suture. The arm must be kept in position by a special bandage. Passive motion and faradisation should be begun early and during ossification.

Ten months before his last operation Ceci performed total extirpation of the scapula on a young scrofulous girl, 12 years of age, for caries of the subscapular fossa and coracoid process, but he was unable to control the fungous granulations in several fistulous tracts. The incision was made atypical, on account of the fistulae, but the profuse granulations hindered regeneration. The patient finally died of multiple caries and amyloid liver.—*Centralbl. f. Chirurgie*, No. 51, 1887.

BENZOATE OF SODA IN URÆMIA.—Starting from Cohnheim's theory of uræmia and from the fact that benzoate of soda inhibits the formation of urea within the system, Dr. A. S. Partzévsky, of the Basmannaia Infirmary for Laborers, in Moscow, administered ben-

zoate of soda (*Méditsinskoié Obozrenié*, No. 5, 1887, p. 508) in ten cases of uræmia, in seven of which the patients were suffering from parenchymatous, and in three from interstitial nephritis. The drug was given every hour, in daily doses varying between 1 and 2 drachms. It was given either in a solution or in wafers, in capsules, and, where the internal administration was impossible, in enemata. Nine patients recovered, one died. Analysis of the cases has led Dr. Partzévsky to the conclusion that benzoate of soda cuts short uræmic attacks, the convulsive phenomena gradually disappearing and giving place to deep sleep. The latter in "a majority of cases, terminates by passing into full consciousness." Given on the first appearance of symptoms (headache, sickness, dilation of pupils), the salt may prevent any further development of the fit. Albuminuria mostly disappears altogether.

STRYCHNINE IN ALCOHOLISM.—The good results obtained from strychnine in dipsomania by N. M. Popoff, V. A. Manassein, Partzévsky, Tolvinsky, and Zavadsky, have induced Dr. S. Jaroshevsky (*Méditsinskoié Obozrenié*, No. 4, 1887, p. 332) to undertake an experimental inquiry into the antagonism between the alkaloid and alcohol. From experiments made on dogs Dr. Jaroshevsky feels justified in drawing the following conclusions: 1. Strychnine undoubtedly neutralizes the intoxicating and narcotic effects of alcohol. 2. It enables large quantities of alcohol to be taken for a considerable stretch of time without causing the usual organic lesions which follow the use of alcohol alone. 3. There are, however, limits beyond which the alkaloid itself becomes injurious to the organism. 4. Therapeutically, strychnine should be used in all forms of alcoholism. 5. It may be regarded as a powerful prophylactic against alcoholism.

ACETO TARTRATE OF ALUMINUM, THE NEW ANTISEPTIC.—This substance that ATHENSTALDT recommends as an antiseptic, is prepared by mixing a 5:100 solution of acetate of ammonium and a 2:100 solution of tartaric acid, the double salt formed being obtained by evaporation. Aceto-tartrate of aluminum is a brilliant, colorless substance resembling gum arabic. It dissolves readily in water, has the odor of acetic acid, and has an acid, slightly astringent, but not disagreeable taste. It is soluble in equal parts of water, and the solution remains clear when heated, but is precipitated by alcohol. It becomes less soluble when exposed to the air on account of the loss of the acetic acid radicle of the double salt. Athenstaldt recommends it as a harmless antiseptic.—*Journal de Médecine*, Dec. 18, 1887.

ANTIPYRIN IN SEA SICKNESS.—In the *Gazette Hebdomadaire* of Dec. 2, 1887, DUPUY reports that he has administered antipyrin on the voyage between Havre to Buenos Ayres. The dose generally found useful was grm 1.5, and its effect was manifested in about ten minutes. It was never necessary to give more than grm. 3 to give relief in about an hour. In a few cases in which the drug was vomited a hypodermatic injection of grm. 1 was efficacious.

THE

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, FEBRUARY 4, 1888.

THE NECESSITY OF NATIONAL CONTROL OF MARITIME QUARANTINE.

In October, 1887, the College of Physicians of Philadelphia appointed a special committee consisting of Drs. J. C. Wilson, E. O. Shakespeare, and R. A. Cleeman, to examine and report upon the condition and defects of the existing principal quarantine stations on our extended seaboard. A few weeks later the committee made an interesting and important report, which was published widely through the press, including many medical journals. The College of Physicians accepted the report and continued the committee, with instructions to issue an address asking the coöperation of all the medical societies and organizations in an earnest effort to induce the present Congress to adopt such a law as will place the whole subject of maritime quarantine and sanitary interests under the control of the General Government. We have just received a copy of the address issued by this committee, making twenty two printed pages. The fundamental propositions presented in the address may be briefly stated in nearly the words of the committee as follows: "a. The present methods of independent quarantine provided and regulated by seaboard States or cities, are essentially defective and insufficient for the exclusion from the United States of the diseases against which quarantine is directed. b. It is impossible adequately to protect the public health of the country against the importation of epidemic diseases by independent local maritime quarantine establishments. c. A National organization would secure advantages not attainable by independent local quarantine establish-

ments, however complete," and is therefore necessary for the public safety. "d. The organization of a National maritime quarantine system in the United States should require: 1. That the whole matter be placed under an appropriate department of the General Government, with a central bureau of control established at Washington. 2. A sufficient corps of medical officers and assistants, with nurses, sanitary police, laundrymen, engineers, and officers and crews for boarding tugs, organized at every station. 3. The erection of necessary hospital and other buildings, wharves, disinfecting apparatus, wash-houses, latrines, etc., in suitable localities, when possible on islands at or near the entrances to harbors and at some distance from the main channel. 4. These stations should be organized and fully equipped at every port of entry of the coast, in such a way as to meet the requirements of each port in the measure of its commerce and immigration, and the special diseases to which it is most exposed. 5. The cost of the establishment and maintenance of the National Maritime Quarantine should be provided for by appropriations from the National treasury, and not from fees exacted from vessels."

These several propositions are illustrated and sustained by appropriate facts and arguments, in detail, by the Committee. The plain direct propositions, however, are sufficient to give our readers a correct understanding of the movement that has been inaugurated by the College of Physicians, of Philadelphia, through its special committee, and for the support of which their active coöperation is solicited. The subject is one of very great importance, and should receive the early and most deliberate attention of the profession without delay.

REMOVAL OF THE UTERINE APPENDAGES.

On Dec. 28, DR. HOWARD A. KELLY read a paper before the Philadelphia Co. Medical Society entitled "Removal of the Uterine Appendages for Disease in which Pain is a prominent Symptom"—possibly the last gynecological paper of the year, and certainly one of the best. It is not a paper of references and quotations, but one written from personal experience, the opinion of the writer in regard to the class of cases suitable for operation, the results to be expected from operation, and in regard to the operation upon neurotic cases pure and simple, conforming closely to that expressed by Hegar in his well-known monograph, but differing widely from the opinions of many so called authorities in this

field, and still more widely from many views, current in the profession, as to the indications for and against operation, and as to the certainty and permanency and value of the results obtained by operation.

It is both important and convenient to make the symptom *Pain* a characteristic factor in the cases under consideration, since the patients usually apply for relief from that symptom chiefly if not alone; and they are willing to and do suffer "all things of many physicians" in order to get relief. And while we emphasize this symptom, we exclude the cases in which size is a characteristic, and are confronted by a large group of mixed pelvic diseases less in size, but not less dangerous; causing more suffering; more certainly undermining the health; and not less important than large fibroids, dermoid or ovarian cystoma, except as to cubic volume. Of the diseases under consideration, common are ovaries enlarged by cirrhosis, ovaries with extensive follicular degeneration, hæmorrhagic ovaries, ovaries containing pus sacs, neuralgic ovaries, ovaries involved in a withering of the pelvic peritoneum with the tubes, and tubo-ovarian disease with co-existing hydro, pyo-, or hæmato-salpinx, which names signify an accident of the disease—they may be absent and the disease still exist. A prominent factor in causing this pelvic distress, especially aggravated at the menstrual period, is, thinks the author, large varicose veins in the broad ligaments.

It would be better, thinks Dr. Kelly, if "pain, *per se*, were never considered a sufficient indication for operation; or, at the worst only those cases operated upon in which the most prolonged and painstaking care had failed to relieve, and where the intensity of the suffering must always seriously interfere with the capacity of the patient to enjoy life." It would be better for all such cases if they first underwent a prolonged treatment at the hands of the neurologists. A host of cases of neuralgic ovaries that have been sacrificed by the gynecologist would have been thus cured, and many cases that have been operated upon and not relieved, would at least have been spared the ordeal of operation, and the too frequent reproach thus be spared the gynecologist, that he recommended the removal of a woman's ovaries, but she declined and a nerve specialist afterward cured her, and, to make the reflection worse, she has since borne a child. As factors in the diagnosis of such cases Dr. Kelly mentions the character of the pain, the facies of the patient and a peculiar sense of boggy fulness to the vaginal finger. Constipation seems to be one factor

in the causation, but while relieving constipation helps the condition, he has not found that it cures any case of long standing. Sequelæ of pregnancy may cause it. He rejects removal of tubes and ovaries as in any way assisting a cure. In one case sent me by one of the most prominent neurologists in the country last spring, the patient is but little improved, although one of the veins tied and cut off was a half-centimetre in diameter. As nothing else seems to do more than mitigate this condition, I propose yet to open the abdomen and simply tie the distended tortuous veins at either end aspirating then, if necessary, and if the patient is no better she will at least be no worse off. There is another class, usually classed among the neuralgic cases, and defined by Mitchell as cases in which the expectancy and concentration of the attention on a normal function leads it to simulate disease in the expression of pain. "These cases if operated upon rarely reflect credit upon the operator, and should ever be considered more in the province of the neurologist than of the gynecologist. I have never operated on a case of this sort, and never expect to." There is also a small group of cases in which general nervous phenomena seem to subside after a time into a local disease.

As to the status of the operation, then, the removal of *diseased* appendages, small in size, but in which pain is a prominent symptom, Dr. Kelly concludes that: 1. It is scientific, because it deals with *diseased organs*. 2. It does more than almost any other single surgical procedure in relieving a large number of cases whose sufferings have been almost unbearable. 3. In *properly* selected cases the percentage of recoveries is 95 per cent., and improving, and the percentage of cures equally large. 4. Unless we adopt the yardstick as our measure of disease, the indications for operative interference are often more urgent than in the case of most cystoma coming under our observation. 5. All the steps of the operation, the technique of the procedure, have now been so widely appreciated, that it may be described as a *safe* operation.

Dr. Kelly's standard, in regard to operating is stated as follows: Are the organs *diseased*? Will their removal cure the patient entirely, or will it relieve a large part of the suffering and at least make life more bearable. A result *absolutely* good is always to be desired; but a result *relatively* good is something to be very thankful for, and grasped in many cases. Not only the general profession, but gynecologists themselves are apt to place all hope upon the operation, like a throw of dice, and to for-

get that it is often more rational to handle the cases from the beginning of their treatment to the end, in such a manner that the operation is viewed by doctor and patient as simply a *step*, at times the only one, again the most important step, or occasionally but one in the fight, in the treatment and progress toward cure. Cases often require after-treatment, and some of his cases have only left entirely well after weeks more of work. His operation removed the focus of the disease, without which he could never have made any progress, but the after-treatment dealt with the disease products that may have been accumulating for years.

THE DUTY ON MEDICAL SUPPLIES.

At the annual meeting of the Georgia Medical Society, held on January 3, 1888, the following resolution was unanimously adopted:

Resolved, That the Corresponding Secretary enter into correspondence with other State and local Medical Societies, with the view to induce them to act in concert with us in an effort to influence Congress to remove the *Import Duty* from all medical and surgical supplies, instruments, and appliances.

Certainly all will agree that "a feeling of humanity suggests that all medical and surgical supplies, instruments, and appliances, including those used in the diagnosis as well as in the treatment of diseases, should be furnished to those needing them at the lowest possible price." Could our Government be persuaded to remove this duty, the public as well as physicians would be the gainers. It is a fact that a large proportion of the medical instruments and appliances offered to the medical profession is of poor quality, and it is just as much a fact that good instruments cost too much. For these reasons many physicians are prevented from supplying themselves with even a moiety of the instruments required for general practice. It is a well known fact that the majority of English and German made medical instruments and supplies are *better* than those made in America, and it is just as well known that such supplies can be bought at a much lower price abroad than in this country. We need not stop to inquire into the causes of this further than to say that the chief cause is the import duty on such supplies, by which the makers of such supplies in this country have the physicians and the public at their mercy. Nor do we purpose writing on "free trade" or "protection," further than to say that the best protection a country can give its citizens is to take measures to protect their health.

If foreign made medical supplies were placed on the free list, the quality and prices of those foreign

articles would compel our home makers to lower their prices and improve the quality of their products—there would then be no market for poor instruments.

The Georgia Medical Association has acted wisely in bringing this matter directly to the individual members of the profession. The only people that can possibly be hurt by the carrying out of the suggestion are the manufacturers; but even if they are injured, it is demanded for the greatest good of the greatest number.

It is to be regretted that, in the circulars sent out by the Georgia Medical Society, no special or even indirect mention is made of foreign books printed in foreign languages, bound volumes of foreign periodicals, and books by foreign authors printed in their own countries, or in the countries of which they are citizens. As the case now stands a U. S. Custom-house officer, knowing nothing of the value of books, appraises imported books by their weight, or by the number of illustrations in them, or by the amount of gilt on them. As the matter is now, the physician in this country pays no duty on the current numbers of an unbound periodical; but if he wishes to complete a file by buying bound volumes of the periodical he must pay duty on them. In what way is the American printer or publisher protected or benefited by an import duty on French, German or Russian text-books, or books of any other kind? and how much money is it in his pocket when the Government collects duty on a bound volume of *Transactions of a British Society*? And by what mental process did any set of men ever hit upon the idea that half a dozen numbers of a foreign bimonthly journal, unbound, do not constitute a book, but that the same numbers glued together and covered with a square foot of pasteboard *do* constitute a book? Wherein is the justice of charging a physician from forty to sixty cents import duty on each dollar book that he buys from abroad, and allowing a brainless fop to import more than half a hundred "London-made" trousers free of duty?

There is another way in which this unjust duty affects the profession: Some unscrupulous publisher imports one copy of an English book, makes a cheap and mutilated reprint of it, and sells it to the profession as the genuine article. By doing this he palms off on the American physician a spurious article, and robs the English author of just compensation for his work. If the American publishers wish for protection, they might have it in the shape of a prohibitory duty on foreign-printed books by American authors—the same law that England has had for many years.

We speak more particularly of medical books. How many publishers of medical books are there in this country? Not a dozen worthy of the name. Not all of these are in favor of an import duty on books, we believe. Is it just that for so limited a number every physician in the country, and through them sick people, should be made to suffer in pocket, and for want of books that they cannot afford to buy at the present extortionate prices?

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, December 8, 1887.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

DR. W. GOODELL read a paper on

INTRA-LIGAMENTARY CYST.

In it he stated that the three abdominal cysts most commonly met with are the true ovarian, the common parovarian and the intra-ligamentary cysts.

The ovarian is typically multilocular, has a pedicle, and starts from the stroma of the ovary, where the ovary is found. It always grows into the peritoneal cavity, and is probably due to a follicular degeneration of the ovaries—which explains its multilocular feature.

The common variety of so called parovarian cyst is typically unilocular, usually unadherent and thin-walled. It does not bear inside papillary growths, but it contains a clear limpid fluid. It is wholly extraovarian, the corresponding ovary being found either pendant apart from it or else plastered upon its walls, but yet wholly distinct. The lining membrane of this cyst being identical with that of the tubes of the parovarium, its origin is referred by pathologists to this fetal relic. To account for its single chamber, it is supposed to originate from some detached loop of the tubes; or, especially, from a little cyst always found at the outer end of the horizontal tube of the parovarium.

The third variety of cyst is called the intra-ligamentary, sessile or encapsulated cyst. From its site between the folds of the broad ligament, from its papillary ingrowths and its quasi malignant nature, and also from the difficulties attending its extirpation, it deserves special description and needs a special treatment.

There are two kinds of cysts encapsulated by the broad ligament: The one is a unilocular, papillomatous cyst; the other a multilocular papillomatous cyst. Both contain clear fluid. The former is probably a cystic degeneration of one of the imbedded vertical tubes of the parovarium, which represents the rudimentary sexual remnants of the Wolffian body. It is usually more encapsulated by the broad ligament than the multilocular variety, but the connective tissue is looser and less vascular.

The multilocular intra-ligamentary cyst has but a few daughter cysts, each cyst distended by a clear limpid fluid and containing exuberant firm papillomatous growths. Its proneness to ingraft itself upon migratory organs, and its firm and vascular union to its capsule of broad ligament, make its removal far more difficult than that of the unilocular variety. Its origin is questionable, although the presence of papular ingrowths would point to fetal tubular relics as the source. Some attribute it to cystic degeneration of supplemental ovarian tissue often found imbedded in the broad ligament at a distance from the ovary. Others attribute it to the tubular relics in the narrow-ophoron. Lastly, Doron attributes it to stray fetal relics in the hilum of the ovary. As this theory met every characteristic of this tumor, viz.: the papillary ingrowth, its multilocular character and its investment by the broad ligament, Dr. Goodell was inclined to accept it. The tumor did not develop into the peritoneal cavity but, growing inwards and into the broad ligament, it parted asunder the true peritoneal folds of the latter. As it burrowed upward it stripped off the peritoneal coat of the womb and bladder, fusing itself to these now naked organs by continuity of structure, and not by mere contiguity. Hence, in the operation for its removal, the womb was liable to be badly wounded and the bladder torn open. Burrowing downward it uncovered and soldered itself to the ureters, the great pelvic vessels and the rectum, making its separation here very dangerous and sometimes impossible. Mounting upward from this region, the sac goes in between the two folds of the mesentery, mesocolon and mesocæcum, and prying them irgrfts itself upon these viscera. In these cases a portion of the cyst must be left behind, as the union is too integral to be severed. Another characteristic is the proneness of the cyst wall to burst and to infect the whole peritoneal cavity with papillomatous poison. Whether this is always malignant is doubtful, for he had seen patients wholly recover whose entire peritoneal cavity was studded with papillary growths. On the other hand, he had had them die in a few months after the operation.

The signs of an intra-ligamentary cyst were immobility and low descent of the sac, vertical elongation of womb and bladder, embarrassment in micturition and in defecation, pelvic pains, unsymmetrical abdominal development, and resonance on percussion from bowels carried up in front.

The operation for the removal of an intra-ligamentary cyst demands great experience on the part of the physician, and taxes all his pluck. These are the cases which are liable to die either on the table or a few hours afterwards from shock. Formerly, when a cyst was found to be intra-ligamentary, the incision was closed and the case abandoned. Now, thanks to Miner, of Buffalo, the surgeon needs rarely to be foiled.

Since the bladder is often dragged upward, and then lies directly under the line of the incision, great care must be taken not to wound it. The cyst should then be emptied, but it must not be lessened in size by the introduction of the hand and the break-

ing up of daughter cysts, because the flow of blood would be too great, and papillomatous material might escape into the abdominal cavity. For the latter reason the opening made by the trocar should be securely closed. The collapsed sac is now drawn out of the abdomen and the capsule is divided, little by little, in a circle on a level with the edge of the abdominal incision. The sac wall is then enucleated so as to leave an uninjured cup-like cavity. To do this with the least amount of hemorrhage, the incision should begin at the lateral border of the sac, where the spermatic vessels lie. After these are secured, the incision is extended to the site of the womb, where will be found the uterine arteries, which will also be cut and secured either by ligature or by pressure forceps. As the surgeon advances he will have to tie or clamp many blood vessels. The attachment to the womb is left for the last, and it can then usually be brought outside of the abdomen, when it may be often converted into a sort of pedunculated attachment which can be ligated *en masse*. Often the whole sac is shelled out of its capsular nest, without any approach to a pedicle. In the deep portion of the enucleation great care must be taken not to injure the ureters, rectum, or the large pelvic vessels. When firm adhesions to important viscera are met with, the adherent portion of the sac must be cut off and left behind, but its secreting layer should be peeled off.

The vast cavity of the empty capsule is treated in one of the following ways, each aiming to exclude it from the peritoneal cavity: (a) The edges of the capsular cup are attached to the border of the abdominal incision and a drainage tube is put in. (b) Through the floor of the intra ligamentary wound a catch-forceps is thrust through into the vagina. There it is made to seize a winged rubber drainage-tube, which is drawn up into the capsular cavity. The edges of the capsule are now trimmed and sewn with gut the one to the other, so as to exclude its cavity from that of the peritoneum.

Whenever neither of these modes can be adopted one large drainage-tube, or even two of them, should be introduced into the pelvic cavity.

DR. DRYSDALE said that the paper of Dr. Goodell covers the ground so thoroughly that he could add but little to what had been said. One important point is the extreme thinness of the cyst wall often met with in these cases, which, in his experience, had made it almost impossible to get the cyst away with out tearing. Another difficulty peculiar to this form of tumor was the risk of wounding the great blood-vessels of the pelvis when the cyst had burrowed under or become incorporated with them.

Dr. Drysdale understood Dr. Goodell to say that he believed that all operators, in removing these tumors, had met with the accident of opening the bladder. He was glad to say that in an experience of twenty-six years he had never been so unfortunate as to open that organ. Dr. Drysdale believed that true papillomata always prove fatal. The faith of some writers in the curability of these growths is founded upon the error of mistaking a benign growth which resembles them for true malignant papillomata.

These innocent masses of papillary granulations, in fact, so closely resemble the malignant that the microscope alone can distinguish one from the other.

Dr. J. PRICE has not had experience in the removal of this form of abdominal growth. He is pleased with the free use Dr. Goodell makes of drainage-tubes; he himself has used three at one time in complicated operations. He is wishing for some form of perfected continuous irrigation applicable to the after treatment of abdominal section. He has had his greatest experience in the removal of pus tubes, and has met with a mixed ovarian and parovarian growth in many of his patients. Mr. Tait had described two varieties of papillomatous cysts, one having virulent characters and the other benign.

Dr. B. F. BAER has had some experience with this class of tumor. He has operated on at least four cases so far as he can recall at this moment, but they had not been quite so severe nor the tumors so large as the typical case described by Dr. Goodell, probably because they had been removed earlier.

The first case was one of a double tumor of very rapid growth, sent to him by Dr. Gabel, of York, Pa. The patient had been perfectly well so far as she knew eight months previously, but at that time she suffered from an attack of acute urethritis and vaginitis, followed by a burning pain in both ovarian regions. Soon she found that the abdomen was enlarging, especially on the right side. Seven months after this date, when he first saw the patient, she was much emaciated, and the abdomen was greatly distended by an irregular, fluctuating tumor. There was a deep sulcus extending from the lower border of the tumor diagonally upwards. The uterus was soft, high up and drawn to the left. When the abdomen was opened two large tumors were revealed. The left was tapped and removed first, because it was uppermost. It had a short, thick pedicle, which was transfixed, ligated and dropped. The larger tumor was next emptied, and it was now found that it had a deep pelvic attachment. Further examination showed that the tumor was subperitoneal and closely adherent to the uterus, as well as to all the pelvic viscera. Enucleation was begun, and after a laborious effort, during which considerable bleeding occurred, the tumor was separated, leaving a large open wound in the broad ligament. This was transfixed and tied *en masse* as a pedicle, making a very thick stump. Just as he was about to close the abdominal wound the ligature slipped off. Great hemorrhage followed this, and it was feared the patient would succumb before it could be checked; but by the rapid application of catch forceps one after another it was controlled until ligatures could be placed. The wound in the broad ligament was finally united by placing ten or twelve interrupted silk sutures. After carefully cleansing the abdominal cavity of all clots the incision was closed—without drainage—and the patient put to bed more dead than alive. It was thought that she could not react from the shock, but she rallied and made an excellent recovery, going home on the twenty-third day, in charge of Dr. Gabel. She remains well three years after the operation.

The second case was also a double tumor of rapid

growth. One or both of the cysts had burst and probably discharged into the bowel on two occasions before he saw the patient. She presented an appearance of great pallor and emaciation. The abdominal surface was rather symmetrical and fluctuation was very marked. The uterus was drawn high up and it was not freely mobile. When the cyst was exposed it presented a deeper color than that common to the ordinary ovarian cystoma. The cyst wall was thin. After tapping, it was found to have a deep pelvic connection. Enucleation was necessary and a thick pedicle was ligated. It was now found that another smaller tumor existed on the left side. This had a peculiar shape, being elongated and deeply seated in the pelvis. It was entirely subperitoneal. The peritoneum extended out from the uterus, spreading over the tumor and approaching the abdominal wall as it is sometimes seen in a fibroid tumor of the uterus which has pushed that membrane upwards in its growth. The cyst extended along the line of the colon, and at first he was not sure that it was not that organ greatly distended by gas. He soon determined that it contained fluid and that its general appearance was similar to that just removed. The fluid was evacuated, when the cyst collapsed. He hesitated as to the proper course now, because of the broad base and deep attachment of the tumor and its close adhesion to the sigmoid flexure. He first thought of stitching it to the abdominal incision and draining, but he did not, and was sorry soon after that he had not carried out his first idea, for his attempt at enucleation of the tumor was attended by so much hemorrhage, although ligatures were applied freely, that he felt compelled to cease his efforts. He had separated at least six inches of the descending colon from the cyst wall when he found that the latter dipped down so deeply into the pelvic excavation that he concluded that it would be too hazardous to finish the operation. He next tried to strip off the lining membrane, but could not do so safely because of its intimate relation with the large blood-vessels and ureter. He finally drew out all that was separated and ligated the entire mass. The stump was dropped and a drainage-tube inserted. The patient recovered, but she still has an occasional fistulous opening at the site of the drainage-tube. He does not think that this cyst was papillomatous, but it was certainly intra-ligamentous.

In another case he performed secondary ovariectomy for a small tumor of this character in a case of hystero-epilepsy and metrorrhagia. The upper surface of the tumor looked not unlike the pregnant uterus in color and vascularity. Its outer wall was interlaced with a network of veins, some of them as large as a quill. Exploration with the fingers showed it to be so deep in the pelvis and so closely attached to the uterus, Fallopian tube and broad ligament that they seemed to be one mass, the whole attached by a broad surface to the pelvic floor. The cyst was almost filled with papillary material and it was difficult, on account of adhesions and the deep location of the tumor, to remove it without the escape of some of this material into the peritoneal cavity. Irrigation was not used, nor was drainage, as they did not

seem to be necessary. The patient made an excellent recovery from the operation. The after history of this case is of value. A year or two subsequent to Dr. Baer's operation she consulted Dr. Kelly, who performed a third laparotomy.

A fourth case had been diagnosed fibroid of the uterus, and it presented some of the symptoms of that disease. The womb seemed to be one with a hard tumor, the size of a child's head, which occupied the right iliac region, and the patient suffered from severe metrorrhagia. The left side was somewhat similarly affected, but not to the same extent. Under either diagnosis of cystic tumor of the ovaries or broad ligaments was made. Laparotomy confirmed the diagnosis and showed the tumors, broad ligaments and uterus to be one mass. Profiting by his former experience, he began by ligating the Fallopian tube and larger blood vessels before beginning the enucleation, and had no trouble from hemorrhage. By this means the larger tumor on the right side was safely removed. But the one on the left side was so firmly fixed to the womb that to remove it would have required hysterectomy as well. Even this could not be done because of the pelvic attachments of the tumor. It could not be drawn up. He then tore a small opening through the posterior surface of the broad ligament and shelled out the lining membrane of the enclosed sac. Free hemorrhage occurred, but was controlled by sponge packing. Free drainage was used; the patient recovered.

In still another case operated upon recently he was compelled to remove the right cornu of the womb with the tumor, because of the close connection of the small tumor to that organ and the tube. A similar condition existed on the left side. The tumors were papillary, and the patient had suffered from great hemorrhage at intervals during two years. Drainage was used, and the patient has recovered from the operation.

Dr. Baer did not consider these papillary cases malignant in the sense that they will return after operation; they were certainly not epitheliomata.

DR. GOODELL's experience tallies with that of Dr. Kelly, that some of his patients were eventually poisoned by the virulent character of the cyst contents, and died a few months later, while the majority were not affected at all. One explanation of these varying results may be expressed in the statement of Virchow that a papillary growth may be benign at an early stage of its development and may afterwards take on malignancy. The walls of these parovarian intra ligamentary cysts are very thin, as mentioned by Dr. Drysdale. He had called attention in his paper to the danger of wounding the great vessels and mentioned a case in his own practice, which Dr. Drysdale overlooked. He likes Monsel's solution as an application to oozing surfaces. He has used it freely, in full strength, over the whole capsular cavity by means of a sponge saturated and squeezed out, or he wets the end of his finger with it and applies it to bleeding points. Our President has been very fortunate not to have wounded the bladder in such operations, for all the eminent operators have reported cases. (To be concluded.)

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, January 17, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. LAWRENCE F. FLICK read a paper on
THE HYGIENE OF PHTHISIS.

(See page 138.)

DR. T. J. MAYS said: I have listened with much interest to this remarkable paper, which expresses a view which I did not think existed to any extent in this city. The author attributes the existence of pulmonary phthisis to the bacillus tuberculosis. I do not think that such a view is borne out by the facts. If it were true that phthisis is propagated by contagion, those who are the most exposed to the disease should be those who would be most liable to contract it. The facts prove that this is not the case. Probably the best evidence of this is found in the history of Brompton Hospital, of London, when the report was made a few years ago. This hospital had been in existence thirty-six years. It has a capacity of nearly four hundred beds. The history includes nearly all those who were connected with the hospital as physicians, nurses, etc., during this period. Not one case of the disease could be traced to the hospital as the source of contagion. Dr. Brehmer gives some remarkable results in his book on the *Etiology of Pulmonary Tuberculosis*. He states that in the town of Göbersdorf, where his hospital is located, that the mortality rate of the native inhabitants from phthisis twenty years ago, at which time the hospital was established, was 50 per cent. greater than at present, notwithstanding that during that time there have been present about twelve thousand consumptive patients who have freely mingled with the citizens. It also often happens that at health resorts for consumptives the physician himself is the subject of the disease, and yet, under such circumstances, frequently improves in spite of the presence of the tubercle bacilli.

The author advocates a strict quarantine against the bacilli. Precisely such a quarantine was carried out in Naples for sixty years up to forty years ago, but the results were entirely negative.

In another statement the author is, I think, not borne out by facts. He states that females are more liable to the disease than are males. I have recently gone over an enormous amount of statistics, collected in this country and abroad, and they show that females are much less liable to the disease than males. The report of my statistics will be found in the *Medical News* of January 7, 1888. The fact that the disease is less frequent among females may be accounted for by the fact that they have a more extended apical motion than the male, and we know that consumption never occurs in any one who has a well-developed apical expansion. On the whole, one cannot help but be pleased with the paper, but while I admire it, I cannot agree with all the statements that it contains.

DR. J. DALAND said: I think it has been well ascertained that an hereditary predisposition does play an important influence in the causation of phthisis. It seems to me that this fact still remains well established. With reference to the climatic treatment of phthisis, I do not think that this can be dismissed with the few words which the author has given to it. There seems to me to be no doubt that in the early stage of the disease, particularly in young men, that a change to a colder climate is of benefit. The disinfection of the sputa is a point on which sufficient importance is not usually placed. It is a matter of the greatest moment, and should be employed in every case of phthisis.

DR. S. SOLIS-COHEN said: I believe that it was Mr. Spencer who thanked a certain philosopher for benefiting him by expressing opposite opinions in a forcible an eloquent manner. I can make my acknowledgments to the reader of the paper in similar language. I admire the suggestiveness and the vigor of his paper, but I find it almost impossible to agree with any of the theories advanced. As to the practice advocated, physicians of experience are all of nearly one mind; nor has Dr. Flick permitted himself to be led astray in this matter by his theories. The question of the omnipotence of the bacillus tuberculosis is one that deserves to be ventilated on every occasion. I have already to-night quoted the remarks of Dr. B. W. Richardson in another connection, but as I consider him the master-mind in medicine of the nineteenth century I need offer no apology for again quoting him. He says, "What have we done, to be visited in the heavens above, in the earth beneath, and in the waters under the earth, with the *pestis bacillorum*, which is now regnant?" Everything is bacillus. Dr. Richardson believes that it will not be long before the bacillus of pregnancy will be discovered.

I think that Dr. Flick has himself given the strongest argument against the bacillophobic views he advances. The chain of events graphically described from several starting points invariably concluding—malnutrition and consumption. Malnutrition is the fundamental, the bacillus is the accidental. It may be that the bacillus does, when inoculated, under certain circumstances, cause tuberculosis, there is some doubtful evidence bearing on this point which cannot be dismissed in a discussion of this kind. Even admitting that inoculating with the bacillus will cause consumption there is no evidence that the inhalation of the bacillus will cause the disease. The inhalation of sputa and the inhalation of the bacillus are two different matters. The pus-cell and the coccus pyogenes are not at all synonymous. They may be in the mixture which goes to make up the sputum, an element similar to those bodies which we know as the leucomaines and ptomaines, which, in a person predisposed and in a low condition, may be capable of exciting the disease by interference with nutrition or otherwise. The evidence on all these points is very far from being clear. But granting for argument's sake, that the microbe is one of the existing causes, we must still recognize, as the reader of the paper has pointed out, that the ba-

cillus is everywhere present, and no matter how powerful are the means brought against it, they are incapable of destroying it or of dislodging it, when it is once in the lungs. Even if we could destroy every bacillus in the lungs, at the very next breath the enemy is once more within the stronghold. Therefore, the only rational thing to do, to prevent consumption whether the bacillus be a cause of the disease or not, is to build up the nutrition of the individual by the measures mentioned to night and by others. We must utterly discard the misleading, and therefore destructive, idea that by bringing germicidal agents against the bacillus tuberculosis we can benefit our patients in the least. Treat the patient and the bacillus will take care of itself.

The question of the marriage of those that inherit the tuberculosis diathesis—and that there is such a diathesis universal experience goes to prove—is a very important matter, and, notwithstanding the views advanced, I think that every one of us should warn against the marriage of those whom we have reason to suppose would transmit such a woful inheritance. The question of baths in consumption is an important one. There are two methods of failure of function in consumptive patients which we must recognize. The one is a failure of assimilation, and the other, no less important, is a failure of excretion. The skin is an important excretory organ, and it cannot be kept in the best functional condition without bathing. While we may not plunge a patient into a cold bath, we must see that he keeps the skin of the entire body clean, and as active as circumstances permit. Baths at a moderate temperature, when possible, or if not, daily sponging of the entire body should be insisted upon. This will often relieve pathological sweating. It is also a question of the greatest importance in how far we shall check sweating by drugs, whether to reduce the skin to a dry and hot condition, is not far more dangerous than the very moderate perspiration for which atropia and other drugs are frequently given. This question must, of course, be decided in every case upon its own merits, with due attention to all the circumstances. Still I feel that it is often better to depend upon our general measures for the relief of this and other special symptoms than to resort at once to symptomatic medication.

DR. M. PRICE said: I would ask Dr. Flick with reference to his experience with inflammatory conditions as a cause of phthisis. I do not believe in hereditary consumption. I believe that 90 per cent. of the cases of consumption come from some inflammatory condition as the starting point. I am a firm and positive believer in the inflammatory origin of consumption. In nineteen years of practice I have not seen more than three or four cases in which I could not discover an inflammatory cause. I believe that without this inflammatory starting-point, consumption is impossible.

DR. FLICK said: I felt considerable hesitation in presenting this paper, as I knew that the opinions expressed were in conflict with those of many on the subject. I have strong convictions on the subject, however, as I have myself been the unfortunate vic-

tim of the disease. I have given the matter a great deal of thought, and have observed the effect of many remedies and of hygienic conditions. I do not know that those who have discussed the paper got my exact ideas on the subject. I hold that consumption is entirely dependent for its initial starting-point on malnutrition. I hold that without malnutrition and malassimilation such a thing as consumption cannot take place. I think that when one is run down he is then a fit subject for the bacillus tuberculosis, and unless he is run down and his digestive apparatus is out of order he will never fall a victim to phthisis, no matter of what his parents or his grandparents died.

The objection based upon the fact that nurses in hospitals do not contract the disease from their patients, is not well grounded. The nurses and others connected with a hospital are generally well nourished, as they get everything that is necessary to keep up their condition. When they get below par they fall victims to the disease.

I believe that no consumptive patient derives benefit from climate in itself. The benefit comes from the change of life and from the out-of-door life. If the patient lives an out-of-door life and takes nourishing food he may recover. If he goes to any climate and stays in the house he will die.

With regard to the relative frequency of the disease in males and females, I would state that my statistics are drawn from the census reports of the United States.

I have no doubt that inflammatory conditions of the lungs have some bearing on the production of the disease, inasmuch as a person who has had pneumonia is left in a depressed condition. I think, however, that a mistake in diagnosis is often made. I believe that a case is often considered to be one of pneumonia when really it is a case of phthisis. It is said that pneumonia has run into phthisis when in reality it was a case of phthisis from the beginning.

I have brought this subject forward with the hope of exciting discussion. This is a matter that is too much neglected. There is no disease that causes as many deaths as does consumption, yet we have become so accustomed to it that we do not give it the attention it deserves.

Stated Meeting, December 28, 1887.

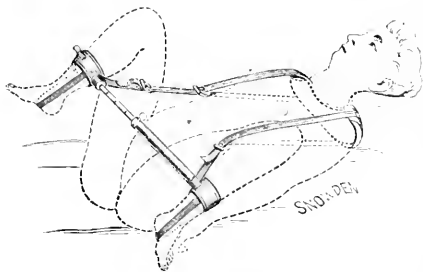
THE PRESIDENT IN THE CHAIR.

DR. W. W. KEEN read a paper on

A MODIFICATION OF THE "PERINEUM DISTENDER" TO AVOID ITS INTERFERENCE WITH RESPIRATION.

In the frequent use of the "perineal distender," I have found the strap which passes under the nape of the neck very objectionable. This strap flexes the legs, and supports their weight. While doing so the weight of the legs pulls the head and neck strongly forward, and thus often seriously embarrasses the respiration. To avoid this, I have had the wooden shoulder-piece of the old Day's apparatus for fracture of the clavicle slightly shortened, and find it answers admirably. Under its loops, over each shoulder, two straps

are passed, with a buckle turned wrong side foremost at one end. The other free end, after passing through this buckle in the armpit, then is buckled to the cross-piece between the legs. By this means the pressure is brought on the shoulders instead of the neck, and respiration is entirely unimpeded.



[I have also had two straps attached at right angles to the straps for the legs. By this means the leg straps can be secured above the calf as usual or at the ankle. In this last position the new straps, by passing under the foot soles, more completely flex the legs, and get the feet out of the way of the operator.

DR. CHARLES MEIGS WILSON read a paper on

THE TECHNIQUE OF OÖPHORECTOMY.

Preparation of the Patient.—In all cases, it is advisable for the operator to have the patient under observation some little time before the operation. Too much condemnation cannot be given to hasty and ill considered operations. The urine should be carefully examined, in order to see that it is free from albumen. Neglect of this rule has doubtless oftentimes been the cause of the patient's death. The gastro-intestinal canal should be in a state of healthy function, and the day preceding the operation all portions of the intestine should be thoroughly emptied. This is best secured by the administration of some gentle laxative, such as the compound liquorice powder, in 1- or 2-drachm doses; or, if there be some torpidity of the liver, by the administration of $\frac{1}{12}$ of a grain of calomel every hour until the bowels are opened; care, however, being taken in both cases not to purge the patient, and not to set up any excessive peristalsis. On the morning of the operation, the rectum should be emptied by an enema and, in order to prevent the accumulation of gas in the intestines and to avoid gaseous distension of the intestines, it is generally best to put into the laxative enema a little turpentine emulsified with the white of an egg. This, as a rule, relieves the intestines of any accumulation of gas present in them, and at the same time is not irritating. The patient should have, on the morning of the operation, a hot bath, which will add to her comfort and remove any sebaceous matter on her abdomen; it is best to have the patient sponged with alcohol after the bath. Also, on the morning of the operation, the patient should abstain from taking any food, unless it be a cup of strong coffee or a little milk and lime-water. The

administration of this food should always precede the time of operation by three or four hours. Above all, it is necessary that the patient have a chance to recuperate her strength and prepare for the mental and physical ordeal of the operation by having a rest in bed of at least three days before the operation, and this is especially important if the patient has come on a long journey and is fatigued with travelling.

The Surroundings of the Patient.—By election, it is always best to operate upon the patient in a hospital, particularly if one have a hospital ward especially devoted to this class of work, in preference to operating upon the patient at her own home. The reasons for this are obvious. Prior to the operation, it is better that the patient should have a room remote from the operating room with all its appalling armamentarium and paraphernalia, in order that she may not become frightened or worried by seeing the preparations for the operation. It is best on the morning of the operation to bring the patient to a room adjacent to the operating room, where she may rest until the anæsthetic is administered. The room should be bright, cheerful, airy, and spacious, and should have pictures on the walls, or something in the room to divert the patient's attention. The patient should also be constantly attended by a nurse during the hours preceding the operation, in order that she may not become lonely and allow her mind to dwell upon the operation. It is best, both before and after the operation, to exclude rigorously the friends and relatives from access to the patient, and to have the patient give herself up entirely to the operator, in order that he may control her movements without the interference of relatives and friends.

The Operation.—The room for the operation should, when possible, have walls and floors that can be thoroughly cleaned and disinfected, in order that the operation may be conducted in an aseptic atmosphere. For this purpose, the operator's own operating room has tile floors and glazed tile walls, so that the whole place can be flooded out with water, and placed in a thoroughly clean condition. An operating-table of plain wood, painted, resembling in size and shape the ordinary kitchen table, is all that is really necessary. One or two stands of light construction, and upon large castors, in order that they may be readily wheeled from one portion of the room to another, and a chair for the assistant who holds the patient's limbs, are all the furniture required. A large can containing distilled water and an alcohol lamp or gas burner under it so as to maintain the water at a fixed temperature, and a tube running from the can to the table, so that at any time during the operation the whole operative field can be flooded, is also in the room. The sponges are used over and over again until the sponge fibre commences to show evidences of disintegration. These are always of the finest quality and for the most part those which are known as potter's sponges, or thin, flat sponges. For the first time, they are prepared as follows:

All of the dust is first beaten out of them. They are then immersed in a 15 per cent. solution of hydrochloric acid for forty-eight hours. They are next thoroughly washed until all the acid is removed from

their interstices. Then they are placed for half an hour in a solution of permanganate of potassium, 180 grains to 5 pints of water. This is done in order to bleach them. The hydrochloric acid solution is, of course, for the purpose of removing any mineral matter that may be in their meshes. They are again washed in running water and placed in a solution consisting of 10 ounces of the hyposulphite of sodium, 5 ounces of hydrochloric acid and 68 ounces of water. They are allowed to remain in this solution for a period of from two to four hours until thoroughly bleached. They are next thrown into troughs of running water where they are allowed to remain for several hours. Afterward they are placed in jars containing solution of bichloride of mercury (1:1000) and hermetically sealed until the time of operation. After an operation they are washed out in warm water, then soaked in a solution of sodium carbonate half ounce to a pint of water for three or four hours, then rewashed in warm water and put back in the 1:1000 bichloride solution ready for use again. The instruments are all nickel plated, with the exception of the cutting edges. They are prepared by being first scrubbed with glycerine soap and then immersed for several minutes in boiling hot water. They are then laid upon towels which have previously been immersed in the solution of the bichloride of mercury (1:1000) and thoroughly dried by superheated steam. They are then ready for use. The needles are kept in a 5 per cent. solution of carbolized oil. The ligatures and sutures are kept immersed in a solution of bichloride of mercury (1:500). They are always washed in distilled water immediately before being used. For suturing the abdominal wall silkworm-gut has been found most satisfactory, clamped and held in position by perforated shot. For ligatures the twisted Chinese silk, imported by Mr. Snowden of No. 7 South Eleventh St., Philadelphia, has been found to be the best. For anesthesia, chloroform has been used instead of ether, unless the operation is likely to prove a long one. The reason that chloroform is preferred to ether is the author's belief that chloroform when properly and carefully administered is nearly as safe as ether, and because with chloroform, as a rule, there is none of the bronchorrhea and gastric disturbance which usually follow the administration of ether. When ether is given, it is found that a less amount is required and that the anesthesia is more satisfactorily induced and maintained by administering the ether upon the Allis inhaler rather than with the ordinary cone. Where chloroform is employed, it is usually administered by means of the shield devised by Professor Billroth and used in his clinic.

The temperature of the operating-room should be about 75°. It is best to cover all portions of the patient's body with light blankets, with the exception of that portion of the abdomen involved in the seat of operation. An assistant sits at the foot of the operating table, and receives and holds the patient's limbs, passes the catheter just before the operation, and, when necessary, with the finger in the vagina, lifts ovary, tube, or pedicle up into the abdominal wound, as the operator may desire. A trusted assist-

ant takes charge of the anæsthetic and does nothing else. The chief assistant stands on the left side of the patient, ready to give immediate aid to the operator.

Immediately preceding the operation the patient's abdomen is wiped off with a little ether, in order to remove any greasy matter that may be present upon the abdominal wall, and it is then washed with the bichloride solution (1:1000), and carefully dried, especial care being taken to see that all the little folds about the umbilicus are perfectly clean. If there be an abundance of suprapubic hair, sufficient is removed to give a chance for extending the incision downward if necessary. The operator having satisfied himself that the patient is sufficiently anesthetized—and sufficient is meant that she is anesthetized to the surgical degree—the abdomen is opened with a few rapid strokes of the knife, without the use of the director.

The operator can readily judge of the depth of the abdominal wall, and really no care is required until the subperitoneal fat is reached. The abdomen is opened in the median line, care being taken to strike the linea alba if possible, so as not to open the sheath of the recti muscles. If we fail to strike the linea alba, no time is lost in dissection in order to reach it, but the abdomen is opened, if need be, through the rectus muscle. The rule with reference to the incision best to be followed is to make it as small as is compatible with the removal of the ovary or of the growth. Where oophorectomy is performed, an incision one and one-half or two inches in length is amply sufficient. On the contrary, where an ovarian cystoma is to be removed, and the tumor is a large one, or perchance, semi-solid, or where the adhesions are numerous, it is a great deal better to enlarge the incision in order that the growth can be readily gotten at, rather than to attempt its removal without knowing exactly what we are doing, and without having room enough to raise it up through the abdominal wound. No care is taken to prevent the blood from the wound in the abdominal wall escaping into the peritoneal cavity, and although it is always best to avoid allowing the contents of a cyst getting into the abdominal cavity, it is thought best to complete the operation rapidly, rather than to avoid the escape of the cyst contents into the abdominal cavity. If, however, we are dealing with a pus tube, then, of course, the greatest care must be used to avoid the escape of the pus into the peritoneal cavity, owing to rupture of the tube wall. The pedicle is transfixed with an aneurism needle, the penetrating arm of which is at right angles to the handle, and tied with a stout twisted Chinese silk. The loop of the ligature carried through the pedicle is held as the needle is withdrawn, and divided; each half of the pedicle is tied, and then the whole pedicle is tied with the remaining parts of one of the ligatures. The pedicle is severed close to the ligature, care being taken, however, to leave sufficient of the pedicle to prevent the ligature from slipping. An important precaution to take to avoid secondary hemorrhage, is to hold the pedicle with the Martin forceps for a few moments and then, if there be no evidence of hemorrhage, it

is dropped back into the peritoneal cavity. Where there is any tendency to hæmorrhage from the pedicle, it is lightly touched with the flat button of the Paquelin cautery. Where the ovary is bound down by adhesions, and there is oozing from those which have been torn asunder, they are lightly touched with the finger, which has been rubbed against a piece of the perchloride of iron. The abdominal cavity is then invariably flooded for about five minutes with a stream of distilled water at a temperature of 100° F. It is surprising to see how, when a patient is profoundly shocked, this intra-peritoneal irrigation with hot water will immediately restore the equilibrium of the pulse and rally the patient from the shock. In operating, care should always be taken not to handle the ovary or the meso-salpinx any more than is absolutely necessary, because, as has been frequently noted, the patient's respiration becomes embarrassed, and often-times temporarily ceases during the time that the ovary is in the grasp of the operator's fingers. Where there is a cyst of any size, its contents are aspirated with Mears' trocar; but where the cyst is small, we prefer to enlarge the abdominal wound, rather than to delay the operation by evacuating the contents of the cyst with the aspirator.

The Toilet of the Peritoneum.—First, as noted above, the peritoneal cavity is thoroughly irrigated with distilled water at a temperature of 100° F. The patient is then turned on her side and all the water allowed to drain out that will. She is then again turned upon the back and the peritoneal cavity carefully sponged, the intestines and mesentery being held out of the way with one hand while with the other the operator carries a sponge attached to a bayoneted sponge-holder, first into the retro-vaginal portion of the peritoneal cavity and then into both iliac fossæ. The sponging is continued until all shreds of coagulated blood are removed, and until when the sponge is brought up only a pale pinkish fluid escapes when the sponge is squeezed.

When we are sure that all hæmorrhage has ceased within the peritoneal cavity, the intestines, if any have been left out of the abdominal cavity, are carefully replaced and the mesentery is folded over them. If necessary to lift loops of intestines out of the abdominal cavity, they should be carefully wrapped in soft towels kept moist and at a temperature of 100° F. Upon the mesentery is placed a thin, flat potter's sponge which extends half an inch or more around all portions of the wound. This is placed there in order to absorb any blood which may escape from the needle punctures. Its centre is grasped by a hæmostatic forcep in order to facilitate its removal after the sutures have all been introduced. A strong, stout needle threaded with a loop of catgut or Chinese silk, in order to snare the silkworm-gut, is used in the introduction of the sutures. The sutures are all introduced from within outward in order to avoid wounding the intestines with the point of the needle, and the free ends of each suture are held in the bight of the hæmostatic forceps. When the sutures are all introduced, the flat sponge is removed and the central suture is first tightened. It is found that as a rule, this makes a

neater approximation of the edges of the wound. The sutures are fastened with perforated shot. The abdomen is carefully washed off with the solution of bichloride of mercury (1:1000), immediately the wound is closed. There is then poured over the surface of the wound a liberal quantity of Keith's dressing (12 per cent. solution of carbolic acid in glycerine). Over this are laid five or six thicknesses of Lister's gauze, and over the first thickness of the Lister's gauze (the one nearest the wound surface) is dusted a liberal quantity of pulverized iodoform or equal portions of iodoform and boric acid. Over the Lister's gauze is then placed a thick wad of bichloride wool—that is wool that has been wet with a solution of bichloride of mercury (1:1000) and thoroughly dried. Over this dressing is applied a bandage of opera flannel fastened with safety pins.

After-Treatment.—For the first twelve hours after operation, the patient eats absolutely nothing. If, at the end of that time, the patient has rallied from her shock, and there is no hyperpyrexia or other symptoms of evil import, we commence to feed the patient with weak tea, ice-cold, giving two or three drachms every hour. This we have found by experience to be the best way of quenching thirst and furnishing gentle stimulation without overtaxing the stomach or producing nausea or emesis. At the end of twenty-four hours we commence the administration of food. This is preferably milk if the patient will take it and the stomach retain it. If the stomach be irritable, we give Koumiss or Matzoon in place of milk. Unless the stomach rebel, the use of the milk is continued in half-ounce doses with a little lime water, and after a few hours it is alternated with beef or chicken tea; on the fourth day, if the patient is doing well, we commence the administration of animal broths and soft food.

The dressing is never changed unless symptoms arise leading us to suppose there is something wrong with the wound, or trouble within the peritoneal cavity. The sutures are removed on the seventh or eighth day. Drainage is never employed, unless we have reason to fear tissue necrosis as the result of traumatism of the operation, or unless we fear hæmorrhage into the peritoneal cavity. If symptoms arise which indicate drainage, it is a very easy thing to open the lower angle of the wound, and insert a drainage tube; where a drainage tube is used, glass is the preferable form. Great care must be taken to see that the mouth of the tube is thoroughly closed by a little tuft of the bichloride wool. When it is necessary to remove any fluid contained in the drainage tube, it is best done with the long uterine syringe, and after the removal of any fluid it is well to pour along the sides of the drainage tube a few drops of Keith's solution of carbolic acid and glycerine. As a rule, the patient is kept in the hospital for a week after the sutures are removed, and is enjoined from travelling any distance until a month has elapsed from the date of the operation. The bowels are moved, as a rule, upon the sixth day, preferably by a gentle saline. Recently we have found Rubinat water the best for this purpose, giving a third of a tumblerful as a dose.

Great care should be taken by the operator to know exactly how many hæmostatic forceps, instruments, and sponges are present in the room prior to the operation. It is the duty of the nurse to count over the instruments and have the count verified by an assistant, both before and after the operation, in order that the operator may avoid the distressing accident, which has happened now many times of leaving a hæmostatic forceps of sponge within the abdominal cavity.

The operation may be performed at any time, with the exception of the menstrual period, and five days before and five days after it.

Complications arising in the After-Treatment.—A majority of the cases that die after oöphorectomy perish from sepsis. Where proper care is taken in the preparation and management of the operation to have everything about the patient, including the atmosphere of the operating room, the patient's body and clothing, the instruments, the dressings, and, above all, the conduct of the operation in aseptic condition, experience has shown that an extremely small per cent. of patients die from this cause. Careful attention to the rules described in this paper will do a great deal to prevent trouble of a septic nature after the operation. Cleanliness is the desideratum, and this is not by any means attained by the use of antiseptic agents. Indeed, the best results have been obtained, not with the use of carbolic acid or corrosive sublimate, but by the use of distilled or plain boiled water. Personally, I take it that the use of carbolic acid is never justifiable, for it can never be used in solutions sufficiently strong to possess aseptic properties without subjecting the patient to the danger of carbolic acid poisoning. Where, however, septicaemia does present itself, it is best combated by reopening the abdominal wound and irrigating the peritoneal cavity with hot water. The septic hyperpyrexia is best reduced by the administration of antipyrin, and when once the temperature is gotten within the safety line it is best kept there by the administration of quinia. In desperate cases good results in the reduction of high temperature may be hoped for from the ice cap. Stimulus must be freely given, and opium or chloral in sufficient doses to control the nervous disturbance which is nearly always present. Where it is necessary to give opium or chloral it is best to give by the rectum, saving the stomach for the administration of food and stimulus.

Peritonitis following the operation is, I believe, generally septic in character; it is best subjugated by the use of salines. Shock after the operation requires the same plan of treatment employed in treating shock after any other operation. The usual means employed are external warmth and the hypodermic administration of cardiac stimulants, as soon as the patient can swallow a few spoonfuls of hot coffee, will generally be found the best means to counteract the shock.

The Limitations of the Operation.—I believe the operation is justifiable for the relief of ovarian pain, otherwise uncontrollable; for the artificial establishment of the menopause in cases of uterine fibroma

characterized by rapidity of growth and exhaustive hæmorrhage, and in which all other means have been tried unsuccessfully; for the cure of those cases of hystero-epilepsy which have well-defined menstrual exacerbations, and which have failed to yield to all other plans of treatment; and finally for those cases (which abound in every hospital for the insane) in which the mania or mental aberration is evidently dependent upon, or caused by, the act of ovulation. Indiscriminate, or what may be called hit or miss spaying, cannot receive too severe condemnation.

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Density of Population—Uses of Embelia Ribes—Inhibitory Action of Cocaine in the Diagnosis of Neuralgias—Treatment of Carotid Hæmorrhage—Diagnosis and Treatment of Eczema—Carbolized Oil in the Prophylaxis of Scarlatina—Abscess of the Liver—Hot Baths in Hydrophobia.

London, with all its millions, is not, after all, the most densely populated city in the country. From the latest report of the Local Government Board, just issued, there is authority for the statement that the density of the population in the city of Liverpool as a whole, measured by the number of persons to the acre, is equal to 112, or double that of the metropolis. There are actually acres in which the population reaches 1,200. It is hardly to be wondered at that these are the home of typhus. Much unwholesome property has been demolished of late years, but it is estimated that 60,000 persons are still living in wretched back to back court houses, around which free circulation of the air is practically impossible. This estimate takes no account of front-street houses nor inhabitants of cellars. In tenement houses are numerous cases of gross overcrowding. Into this population immigrants from Ireland, where typhus is endemic, are constantly arriving, and it is to the temporary housing of these often semi-destitute newcomers that much of the overcrowding is due.

The berries of the *Embelia ribes*, known in India under the name of Babarung, have been found by Dr. W. L. Scott to contain several new principles, some of which are likely to become of great therapeutic and pharmaceutical importance. Embelin is the name suggested in England for a principle yielded by these berries, which crystallizes in beautiful golden yellow scales. It is said, although only very sparingly soluble in water, to act as an anthelmintic and germicide of a most powerful kind, speedily killing many of the more common microorganisms or paralyzing their development. Dr. Warden has also partially examined these berries, and quite independently extracted therefrom a bright yellow scaly alkaloid which he calls embeline. Further research is being made to determine whether the new principle is an alkaloid or a glucoside.

Dr. Hurry Fenwick recently gave some interesting

demonstrations by means of decapitated frogs of the inhibitory action of cocaine as a diagnostic factor in cases of neuralgic pain of the cranial, cervical, intercostal, renal, and lumbo-sacral nerves. Thus, without a vesico-rectal injection of cocaine, the leg of a decapitated frog was rapidly jerked out of a weak acid solution in a fraction of a second, but after cocaine had been injected into the bladder or rectum, the leg was not withdrawn until after twenty to thirty seconds. This inhibitory power was only observed when weak acid solutions were used. Cocaine possessed no power of delaying the reflex excitability consequent upon stronger acid solutions. The following propositions were formulated: 1. Slight nerve irritations, as neuralgias of any part, can be relieved by injection into the urethra of a few drops of a 10 or 20 per cent. solution of cocaine. 2. Severe nerve irritations, as the pain of carcinoma, etc., cannot be thus relieved. Mr. Fenwick has used this knowledge largely in the differential diagnosis of urinary disease. Thus, if the renal pain was immediately relieved by cocaine, he judged the neuralgia to be due to a slight irritation, such as that experienced in lithiasis, congestion or grit. If unrelieved he diagnosed more serious mischief, as stone, dilated pelvis, etc. He also drew attention to the value of cocaine in operations upon the bladder and urethra in preventing damage to an unhealthy kidney, and that the renal congestion produced by distending the bladder or injuring the walls, and this flooding of the kidney which, if the organ was damaged, led to rigors, suppressions and suppurations, might be wholly or partially prevented by the inhibitory action of cocaine upon the renal circulation. Mr. Fenwick gave also a long series of cases in which pain in various parts of the body had been temporarily relieved in 30 to 180 seconds by the urethral injection of a 20 per cent. solution of cocaine.

Mr. Frederic Treves has devised a somewhat new plan for the treatment of carotid hæmorrhage when taking place from a small distant branch, as he considers the ligation of the carotid trunk was a severe, and often unnecessary method of treatment. His plan is to expose the artery and pass a thread of catgut round it, if the loop thus formed is pulled up, pulsation in the artery stops, if relaxed the circulation goes on again. In four cases he has quite recently found this maneuver successful, and one great recommendation of the method pointed out to be, there are no grave risks from the operation itself, and in the four cases under his care there had been no local inflammation, nor had there been obliteration of the vessel.

Dr. T. Robinson has just brought out a useful little work upon "The Diagnosis and Treatment of Eczema," in which he has annihilated the ideas of Mr. Hutchinson, Sir James Paget and Dr. Laycock. Dr. Robinson considers that persons having an eczematous diathesis show a tendency to become bald or gray early in life, their teeth degenerate early, their incisors often wearing down and falling out. The nails also present many forms of malformation, such as being marked with white spots and transverse lines, being pitted with small circular depressions, or in

some the longitudinal flutings being exaggerated. As to the shape of the nail, it is often flat, sometimes even concave in its upper surface, frequently shaped like a shield; arcus senilis is also well marked as a rule in cases of eczema.

Mr. I. Brown, one of the provincial medical officers of health under the local government board, has drawn attention to the prophylactic properties of carbolic oil in early and continuedunction in cases of scarlatina. The oil he suggests contains only 3 per cent. of pure carbolic acid, and he suggests use as soon as the rash is out over the whole of the body with the exception of the face. The unction is used twice a day with a warm bath every night and the treatment to be continued until the sixth week, by which time the desquamation is generally complete.

An interesting case of antiseptic incision in a case of abscess of the liver is recorded. The patient, aged 30, being placed under the influence of ether, an incision about four inches in length was made half an inch below and parallel to the right costal margin, commencing two inches external to the linea alba; a dissection was made to the peritoneum which was cut through. It was then seen that the upper surface of the liver was adherent to the diaphragm as far as the margin of the ribs, distinct fluctuation could be felt by passing one finger on the under surface of the liver and another on the lowest part of the thoracic wall. The peritoneal wound was then closed with catgut sutures and a trocar passed through the adhesion into the abscess cavity. The opening made by the trocar was gradually opened and ten ounces of pus evacuated. The cavity was syringed with a solution of 1 in 5000 perchloride of mercury, the wound closed by catgut sutures and dressed antiseptically. On the third day the temperature was normal and at the end of a month the tube was removed, and the patient was well a few days later.

Dr. Buisson, of Paris, claims to cure hydrophobia by hot baths often repeated, he makes his patient remain continually in a hot room and the baths given are made as hot as 142°.

G. O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

FROM OUR OWN CORRESPONDENT.

New York County Medical Association—*New York Quarantine Station*—*Hospital Saturday and Sunday Fund*—*Hudson River Ice*—*Bequest to the Academy's Library*—*Bichloride of Mercury for Children*.

The annual meeting of the New York County Medical Association was held Monday evening, January 16, when the following officers were elected for the ensuing year: President, Dr. J. R. MacGregor; Vice-President, Dr. C. S. Wood; Recording Secretary, Dr. Frank Graner; Corresponding and Statistical Secretary, Dr. J. W. Small; Treasurer, Dr. C. Ellery Denison; Member of the Executive Committee, Dr. Charles A. Leale. On this occasion there

was an attractive discussion on The Diagnosis and Treatment of Pleural Effusions, which was opened by Dr. Edward G. Janeway; and among the other speakers were Drs. J. Lewis Smith and Charles A. Leale.

After the repeated exposures that have been made of the many abuses existing at the New York Quarantine Station, it is seriously to be hoped that the Legislature will be sufficiently alive to the influence of public opinion, if not to a sense of their duty, to place the quarantine establishment on a business basis, to abolish its extortionate revenues, and to see that the contributions made by the public to secure its efficiency should be devoted under strict accountability to that purpose alone, and that its management be put into competent and responsible hands. During the first few days of the session one or two measures providing for certain reforms in this department, which, strangely enough, emanated from the very quarantine ring which for years has been mismanaging its affairs for political ends; but, whether from distrust of the motives of their originators or some other cause, nothing has as yet been done to secure a business like and efficient quarantine management. Yet the exigency is a pressing one. In the forcible language of Mayor Hewitt, in transmitting to the Governor and Legislature the report of the Committee of the Academy of Medicine on their investigation of the quarantine station: "It is evident that neither this city nor the State, nor any other portions of the Union, are free from the dangers, of the spread of contagious diseases unless the quarantine establishment at this port, under the control of the State authorities, is at once reformed and reconstructed. The danger of delay is too imminent to admit of any postponement whatever."

The Presbyterian churches whose hospital this year, much to the regret of the other hospitals, and of many prominent Presbyterians also, withdrew from the Hospital Saturday and Sunday Association, seem to have made special efforts to secure large contributions for their institution, as it was recently announced that during and since the Christmas holidays the Presbyterian Hospital had received no less than \$31,000. Notwithstanding this withdrawal in subscriptions to its funds, it was stated at the annual meeting of the Hospital Saturday and Sunday Association, which was held Jan. 16, that the receipts reported from the annual collection were this season in excess of those of last year at the same date after the collection. Up to Jan. 18 the reported receipts had amounted to \$45,725. The Roman Catholic and Presbyterian churches are the only ones that do not contribute to the funds of the Association, the aim of the managers of which has been to render it more and more unsectarian by the discouragement of designated offerings in their annual collection.

In the light of the investigations reported by Dr. Prudden in his paper read before the Academy of Medicine last year, there is reason to fear that consumers of Hudson River ice will next summer be exposed to greater danger than ever, since, owing to the lack of continued cold weather, a larger quantity of ice than usual has been gathered from the upper

Hudson, which receives the sewage of Albany, Troy, and other cities and large towns. During the past autumn typhoid fever was so prevalent at Albany that the Mayor, at the request of the Board of Health, issued a proclamation urging the citizens generally to boil the drinking-water, which was believed to be the source of trouble.

The Academy of Medicine has recently received a valuable addition to its library, in the shape of about 6,000 books that belonged to the late Dr. Middleton Goldsmith, of Rutland, Vermont, formerly of this city, and one of the founders of the New York Pathological Society. The *Rutland Herald* states that Dr. Goldsmith, feeling that death was near, wrote for his friend Dr. John C. Peters, with a view to turning his library, through him, over to the Academy. He had not embodied the bequest in his will, however, and his daughters, who were anxious to carry out his wishes, were told by their lawyers (their father being then unconscious) that, in the absence of a verbal or written conveyance, the library would have to be sold with the rest of the estate. They watched him anxiously, and only a few hours before he died he recovered consciousness and said, in answer to an inquiry: "Tell Peters to come on and get the books."

In order to prevent possible mistakes, it should be stated that the quantities of bichloride of mercury mentioned as safe to be given to children of various ages, in the notice of Dr. J. Lewis Smith's recent paper on diphtheria, published in *THE JOURNAL* of January 7, were meant, not for a single dose, but for administration during twenty-four hours.

P. B. P.

THE PNEUMATIC CABINET AND ITS CLAIMS.

Dear Sir:—A recent discussion at the Academy of Medicine in New York, in which I had the honor of participating, showed such widespread misconception of certain facts of medical history and of physical law, that I desire to place on record in a journal that reaches the members of the profession in all sections of the country, some of the most serious of the objections which a number of physicians having no pecuniary interest in any form of instrument, but for many years extremely interested in promoting resort to pneumatic treatment as a powerful agent for good in the management of pulmonary diseases, and especially of phthisis, hold against the claims made for the instrument advertised as the "Pneumatic Cabinet." These objections are:

1. That the good or bad effects obtained in treatment of disease by modification of air pressure are due to that modification, and not to the particular apparatus employed; as a definite solution of morphine, for example, administered from a glass tumbler, and the same solution of morphine administered from a silver teaspoon, have exactly the same effect.

2. That, with the very moderate pressures employed in the pneumatic cabinet, which are all within ordinary barometric ranges; that is to say, within the ranges to which the organism is always in process of adjusting itself, the effect due to any *absolute change* of pressure is *nil*; and that therefore the effects, good,

bad, or indifferent, are due solely to the *difference of pressure between respired and surrounding atmospheres.*

3. That, as the effects are thus due to differences of pressure (or "pneumatic differentiation"), it is a matter of indifference, therapeutically, by what mechanism these differences are obtained. That, in other words, supposing barometric pressure to be represented by 30 inches of mercury, the physiological, and therefore therapeutic effect of reducing the air about the patient to a pressure of 29 inches, while he breathes the ordinary (30 in.) air, is exactly equivalent to the effect of increasing the pressure of respired air to 31 inches while the patient remains in the ordinary (30 in.) atmosphere; the effect in either case being due not to absolute pressure, but to a difference of pressure represented in each instance by one inch of mercury. In the same manner as the physical effect of "pneumatic differentiation" upon the mercury column of the gauge is identical in both cases, so the physiological effects upon a patient are identical in both cases.

4. That the question of apparatus becomes thus simply a question of convenience and of expense.

5. That, provided any apparatus permits the following four modifications of pressure, or any combination of them, it fulfils all indications; and the choice of instruments can be made by the physician, independent of any mysterious advantages alleged, but never demonstrated, for any particular apparatus:

1. Air pressure within the thorax at rest exceeds atmospheric pressure—during inspiration.

2. Air pressure within the thorax at rest exceeds atmospheric pressure—during expiration.

3. Air pressure within the thorax at rest is less than atmospheric pressure—during inspiration.

4. Air pressure within the thorax at rest is less than atmospheric pressure—during expiration.

(We speak of the "thorax at rest" to exclude the effects of muscular movement and elastic traction, which are the same under similar conditions, independent of "pneumatic differentiation.")

The first condition is fulfilled by inhaling condensed air or rarefying surrounding air.

The second condition is fulfilled by exhaling into rarefied air or condensing surrounding air.

These facilitate respiration.

The third condition is fulfilled by inhaling rarefied air, or condensing surrounding air.

The fourth condition is fulfilled by exhaling into condensed air or rarefying surrounding air.

These render respiration more difficult.

6. That the pneumatic cabinet is less convenient than gasometer apparatus for the following reasons:

The pneumatic cabinet, as ordinarily employed, combines the *first* and *fourth* conditions, and is exactly equivalent to *continuous respiration of condensed air* with a double-cylinder Waldenburg apparatus, or one of its modifications; or to inhaling from a single-cylinder apparatus, and having the mask fitted with an expiratory resistance valve. It is also possible to employ the cabinet with a combination of the *second* and *third* conditions; but, although other possibilities than these two are claimed for it they have never

been demonstrated in practice, and its most honest advocates frankly admit that they are not practical.

With the Waldenburg and similar apparatus, the following eight methods are both possible and practical, and have all been employed:

A. Any one of the four, alone.

B. First and second.

C. First and fourth.

D. Second and third.

E. Third and fourth.

The most useful of all combinations are the first and second and the third and fourth; *both practically impossible with the cabinet*, as are also all of the single methods, which are often more useful than any of the combinations.

7. The pneumatic cabinet is far more expensive than gasometer apparatus, which now range in cost from \$30 to \$90; and its use is thus restricted, while gasometer apparatus can be purchased by any physician and by many patients.

8. In view of the recorded history of pneumatic treatment, and of the facts that the pneumatic cabinet is a "patented remedy"; that it has no advantages physically or clinically over other apparatus; that it offers less mechanical facilities for variations of method; that the patient is shut away from examination and control during treatment or from prompt assistance in case of accident; that the cost of the cabinet is out of all proportion to the cost of other instruments, thus tending to prevent rather than promote the extension to all needing it of the benefits of this plan of treatment, we respectfully submit:

9. That while those who prefer the cabinet upon commercial, æsthetic, or mechanical grounds are entitled to use and express that preference, they are not justified, either by recorded facts or physical principles, in claiming novelty or superiority for the instrument, its therapeutic methods or its clinical results; or in representing as the beginning and the end of the science of pneumo-therapy an instrument which is simply a comparatively unimportant incident in its development.

In thus endeavoring, in the interests of science and of humanity, to record the truth about a much beloccluded matter, I have no desire to detract from any merit of which the history of their invention will show my friends Mr. Ketchum and Dr. Williams to be deserving; and, as I frankly stated in the discussion at New York referred to in the beginning of this letter. I think they are entitled to thanks for having, by their business push, given professional prominence to a subject to which their predecessors in the field had not succeeded in attracting much attention in America, outside of the city of Philadelphia. I am yours very truly, SOLOMON SOLIS-COHEN, M.D.

Philadelphia, January 20, 1888.

THE AMERICAN PHYSIOLOGICAL ASSOCIATION was organized on Dec. 30, in New York City, for the promotion of physiological research and of social intercourse among the physiologists of the country. Dr. H. P. Bowditch, of Boston, is the President, and Prof. H. N. Martin, of Baltimore, Secretary and Treasurer.

NECROLOGY.

J. F. WAKEFIELD, M.D.

J. F. Wakefield, M.D., the oldest physician in Everett, Mass., was born in Londonderry, Vt., June 20, 1825, and died at his residence Friday evening, January 14, 1887. His sickness was long and painful. This began with a serious attack of inflammatory rheumatism about two years before his death and its convalescent stages developed serious complications of the heart and liver, with dropsical symptoms. These increased in intensity during the last year, accompanied with indications of blood poisoning, yet he bore it with a Christian fortitude, as those who were constantly with him can testify. His cheerful, happy disposition robbed the sick room of its gloom until the last moments of his life.

Dr. Wakefield was beloved and respected by all those who had the pleasure of his acquaintance. Those to whom he rendered professional services, his loss is felt as a personal bereavement; his presence brought into the sick room encouragement and hope, his kind offices to the suffering will remain a pleasant recollection in many households.

Dr. Wakefield attended lectures and took his degree at Philadelphia Medical College in 1853, and at once came to South Malden (now Everett), to make this place his home and grow up with the people. It required courage for a young man, 28 years of age, to wait the slow process required to gain the confidence of the community. His untiring devotion to his patients was in later years rewarded by a large and lucrative practice. No call was ever made for his services which did not receive prompt attention, oftentimes when he really was the one who most required professional care, and his visits in very many cases he well knew were gratuitous.

His straightforward, manly course soon attracted the attention of his fellow townsmen, and offices of trust and responsibility were given him. He was a member of Palestine Lodge of F. and A. M.; was a charter member of Paladium Council, No. 287, Royal Arcanum, and its Treasurer until within a few months of his decease, honorary member of the Legion of Honor, and its examining surgeon, also Treasurer of the Everett Associates, for sixteen years, resigning his trust only within a few days of his death; and was a member of Massachusetts Medical Society, connected with the Middlesex South District; an active and much respected member of this organization, having held the office of one of its Censors several years, and been one of its Counsellors at different times. He was a member of the American Medical Association since 1865. He enjoyed the fullest confidence of this large and influential society of physicians.

Dr. Wakefield was a life-long temperance man, attended the Congregational church in Everett, although an Episcopalian in religious belief. In politics he was a staunch Republican.

He leaves a widow whose love and devotion during his long weary months of suffering was rewarded by his grateful appreciation of her tender care, and

the kind offices so freely extended by neighbors and friends never failed to receive his warmest gratitude. Thus passed from life, through death, into life beyond, this "good physician." The funeral services were held Monday, January 17, a private burial service at the house, after which public services in the Congregational church, the Episcopal clergyman officiating, after which Palestine Lodge of F. and A. M., conducted the impressive masonic burial service. He was buried at Woodlawn.

F. B. W.

MISCELLANEOUS.

BACILLUS OF CANCER.—Some time ago Scheurlen announced in Berlin his discovery of a bacillus of cancer, which could be cultivated, and when inoculated on lower animals produced cancerous growths. On December 19, a letter from Dr. Domingos Freire, of Rio de Janeiro, was read before the Society for Internal Medicine of Berlin, claiming priority in the discovery, and showing that Scheurlen's observations are confirmatory of his own.

ROLL OF PERMANENT MEMBERS.—The name of Felix Formento, M.D., of New Orleans, La., was unintentionally omitted from the list published in THE JOURNAL of December, 31, 1887. In the same published list the residence of Dr. C. B. Powell is given as Attica, Ia., when it should have been Albia, Ia.; and that of Dr. J. D. Roberts, Goldsboro, N. C., should have been Durham N. C.

THE TOKIO MEDICAL LIBRARY has now the largest collection of English books in Japan. Most of them have been obtained by donation, and in the case of periodicals by exchange with the *Sei I Kwai* medical journal, the organ of the *Sei I Kwai*, the Society for the advancement of medical science in Japan.

DR. R. HARVEY REED calls attention to the frequently filthy condition of the water tanks on railway passenger cars, 21.5 per cent. of them being found in bad condition, and frequently containing articles the sight of which would, temporarily at least, allay the most severe thirst.

THE "DIETETIC GAZETTE" is the new name of the *Journal of Reconstructives*, edited by Dr. George B. Fowler, of New York.

PROFESSOR PURJINKE has recently celebrated his centennial birthday at Breslau.

DR. ALBERT, Professor of Surgery of the University of Vienna, has received the title of K. K. Hofrath.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JANUARY 21, 1888, TO JANUARY 27, 1888.

Capt. H. G. Burton, Asst. Surgeon, granted leave of absence for one year on S. C. D., to take effect when able to travel. S. O. 19, A. G. O., January 24, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JANUARY 28, 1888.

P. A. Surgeon W. A. Wheeler, granted leave of absence for thirty days. January 24, 1888.

P. A. Surgeon J. H. White, granted leave of absence for two days. January 26, 1888.

Asst. Surgeon R. B. Watkins, granted leave of absence for thirty days. January 28, 1888. Resignation accepted, to take effect March 15, 1888. January 28, 1888.

Asst. Surgeon G. T. Vaughan, appointed an Asst. Surgeon January 25, 1888, vice A. D. Revan, resigned. Assigned to temporary duty at Marine Hospital, Boston, Mass. January 26, 1888.

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No. 6.

ORIGINAL ARTICLES.

EVULSION AS A MEANS OF RADICAL CURE OF PTERYGIUM.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY J. W. WRIGHT, M.D.,
OF COLUMBUS, OHIO.

Whether the limited amount of literature upon the treatment of pterygium is evidence that the highest degree of perfection possible in that direction has been attained, and that the various means proposed for its removal are all that can be desired, or that the subject is such as not to demand any special attention, certain it is, the methods employed for the removal of these morbid growths have been very unsatisfactory, and patients fail to receive such an assurance of benefit as it is desirable they should have.

Although the affection is of little importance unless it implicates the cornea to such an extent as to obstruct the vision, yet its appearance to many, and especially to its possessor, is more or less repugnant, and patients are generally solicitous to rid themselves of its presence.

Pterygium consists of hypertrophied tissue, often very trifling in amount, but sometimes very considerable and unsightly. This morbid growth is fibrous in structure and is not firmly adherent to the cornea and sclerotic. It is not covered with conjunctival tissue, but with an epithelial substance peculiar to itself which surrounds the hypertrophied mass, and is entirely disconnected from the conjunctiva, except at the linear adhesion on its under surface, where it acts in the manner of a pedicle.

It seldom reaches or passes the centre of the cornea, for the reason, perhaps, that the blood-vessels which feed it do not extend further, usually, than that point.

Without attempting to discuss the cause of this morbid growth, it is our object to consider the most feasible means for its thorough and permanent removal. Authors mention various methods for this purpose, which resolve themselves into three plans of operating, viz.: excision, transplantation and ligation, or a combination of two or all of these methods; thus, one recommends its entire removal by excision, by dissecting it from its apex to the semilunar fold, where it is excised; another recommends

dissection of the apex from the cornea to its base, and then inserting the dissected portion underneath the conjunctiva, where it is held by sutures; another advocates the ligation of the base and the dissection and excision of the apex; and finally, another the ligation of both the base and apex together with the narrow strip underneath the growth, where the ligatures are allowed to remain until the growth sloughs away. If any of these methods or any of their combinations have given general satisfaction, I am not aware of it; but, on the contrary, oculists usually discourage patients from having anything done with the affection unless it encroaches so far over the cornea as to interfere materially with vision.

In a practice of more than twenty years, during which time I have attempted the removal of quite a number of these growths by one or another of the methods herein enumerated, I can recall but one case in which the result was all that could be desired; but, on the other hand, many of them were not benefited in the least, the operation frequently having resulted in unsightly cicatrices.

Arkt has demonstrated that pterygium *enters into the substance of the cornea, beneath its epithelial layer*, yet, as previously mentioned, the connection is *not firm, and its fibres can be readily separated from the cornea with very little effort*.

A few years ago, before the anæsthetic properties of cocaine were discovered, I attempted to remove a large pterygium in the case of a man who was somewhat under the influence of liquor. I caught the growth near its apex with the forceps. When I was about to separate it from the cornea with the scissors, he made a desperate effort at resistance, and caught my arm with which I was holding the forceps so suddenly that I did not have time to relax my hold. It bled freely, and I was fearful that the eye was badly injured. After a considerable time I was allowed to cleanse the eye, when I found that the pterygium was entirely separated from the cornea and as far back as midway between the sclero-corneal junction and the caruncula lachrymalis.

That part of the cornea to which the growth had been attached was somewhat hazy, and presented the appearance of numerous small depressions not larger than pin-points, showing the points where the fibres had penetrated the cornea. The patient would not permit me to proceed farther—not even to excise the loose tissue remaining.

I recommended the application of cold water to the eye and advised him to return daily, that I might

watch the eye. He went home and, as he suffered no pain, concluded he was doing well enough, and did not return for three weeks, at which time the detached tissue had contracted and I could scarcely see any corneal opacity or other evidence that the eye had ever been affected with pterygium.

What I so much feared in this case was that the corneal layers had been separated and, as a result, corneal ulceration; or, on the other hand, infiltration between the separated layers and a consequent extensive opacity.

Subsequently I thought little of the occurrence more than to congratulate myself how fortunate I had been in not having destroyed the man's eye, until some time afterwards I was relating the circumstances to a physician, when he gave me the following:

An old gentleman of his acquaintance had a large pterygium on each eye. He had been having his eyes "treated" from time to time by different parties, principally traveling "specialists," without benefit, when, in conversation with his family physician, he was informed that treatment in such cases was not generally successful, that his eyes would probably not become worse, and he was advised to desist.

The old gentleman had his own idea about the matter, and insisted that the growth would continue to "cover the sight" and in a short time leave him hopelessly blind. He argued that his disease was similar to that of the horse, known as "hooks," and that "hooks" are cured simply by "pulling them off." He concluded to act in his own behalf and, having procured a small pair of forceps, such as is commonly known as "eye tweezers," he actually removed the pterygia from both eyes, and without subsequent treatment the procedure effected a permanent cure.

I have ascertained that the affection known as "hooks" in the horse is simply an attachment of the membrana nictitans to the cornea, the adhesion being, probably, the result of an inflammatory action of this membrane and the ocular conjunctiva.

Shortly after this, I presume about two years ago, I noticed in some medical journal that a foreign oculist, Arlt, I believe, was removing pterygium by evulsion, and being greatly interested, by reason of the circumstances just mentioned, I have been anxiously waiting to hear with what success. So far I have been disappointed.

For the past eighteen months I have used no other means in the removal of pterygium than evulsion. As yet I have had only a few cases, but the result in each has been eminently satisfactory.

In my first operations I removed the apex, and as far back as the caruncula lachrymalis, with the forceps, and excised the loose tissue with the scissors. Afterwards I ligated the base first and then removed the growth with the forceps as far as the ligature, and excised as near it as possible. In this I found a great advantage, inasmuch as the ligature prevented hemorrhage and I could operate to a better advantage.

Recently, at the suggestion of Dr. Baldwin, of this city, while assisting me in an operation, I discarded the forceps, and took in its stead a blunt hook—such as is used in the operation for strabismus—which I

am pleased to find a much better instrument for this purpose.

After the base has been ligated the pterygium is separated from its attachment with the blunt hook, by running it under a small portion at a time, especially if the pterygium is large; first separating the thin connection between the ligature and the cornea; then a small portion of the corneal attachment at a time, until the whole is removed.

The loose tissue is excised as close to the ligature as possible, cold water dressings are used, and the ligature is allowed to remain until the strangulated portion sloughs, when it, with the ligature, will become detached and pass off.

The advantage of this operation is the *complete and thorough* removal of the growth from the parts into which it has been imbedded, without the injury or superfluous removal of any normal tissue.

THE TREATMENT OF NERVOUS AND MENTAL DISEASE BY SYSTEMATIZED ACTIVE EXERCISE.

Read before the Philadelphia County Medical Society, on January 11, 1883.

BY CHARLES K. MILLS, M.D.,

OF PHILADELPHIA, PA.

Exercises or movements for medical purposes, medical gymnastics, in other words, have been divided and subdivided to an absurd degree by Ling and his followers. Schreiber gives an example of a German term for what is called the quaternary combination of the standing position, which term contains forty-five letters and nine different words, although it is written in German as a single word. The division, however, into such movements or exercises as passive, duplicated active, and active, is rational and useful. Passive movements are performed upon the patient or individual, his will not coming into play except in submitting. In duplicated active movements, both the operator and the individual treated, take part; the first resisting while the second acts, or the reverse. Sometimes these movements are spoken of as semi-active and semi-passive; in the former, the physician or operator resists; in the latter, the subject resists. Movements of this class are of the greatest value in some forms of nervous or neuro-muscular disease, but it is not my purpose to discuss them, unless it be incidentally, in this paper; nor do I intend, except perhaps in the same manner, to speak of massage.

It is of systematized active exercises, that I will more particularly speak. The expression single active movement indicates that the movement is performed by a single individual without direct assistance, although it may be done under the orders of a physician or master. Exercise of this kind may be performed either with or without apparatus, and even when the latter is used it need not necessarily be expensive. While massage and electricity have received a large share of attention from neurologists, they have neglected too much the use of medical gymnastics, particularly systematized active exercises. Masseurs and masseuses, good, bad, and

indifferent, now abound in our large cities, but good instructors in physical culture, as applied to medical purposes, are not numerous.

"Gymnastics," "exercises," and "movements," by some medical writers are used as practically synonymous. Dr. George H. Taylor, however, claims that we should carefully distinguish between gymnastics and movements, and between calisthenics and movements, and that evil has grown out of confounding these terms. It is probably better in a medical paper to speak with precision of "movements" or "exercises," designating the particular kind, but "medical gymnastics" covers the whole ground, and the word "gymnastic," or "gymnastics," used in a general sense, may be properly employed in medicine.

I will not give much space to a discussion of literature, but will refer briefly to a few important publications, including those which I have chiefly consulted in the preparation of this paper.

The attention of the profession of this country has been too little attracted to the publications, and the practical work of the brothers, Dr. George H. Taylor and Dr. Charles Fayette Taylor, of New York, who may be regarded as the pioneers in this country of the gymnastic treatment of disease. They deserve great credit for their efforts, not wholly appreciated. As early as 1861 a book was issued on *The Theory and Practice of the Movement Cure*, by Charles Fayette Taylor, M.D., in which is discussed in an interesting and practical way, the treatment by Swedish movements, of curvatures, paralysis, indigestion, constipation, diseases of women, etc. In 1879 appeared a treatise entitled *An Exposition of the Swedish Movement Cure*, etc., by George H. Taylor, A.M., M.D. Dr. Benjamin Lee, of Philadelphia, by his practical labors, and his publications on massage and Swedish movements, has done much to advance the cause of mechano-therapy in America, and stands with the Taylors as a pioneer in this department.

Archibald MacLaren's *System of Physical Education, Theoretical and Practical*, is an invaluable book, and while not intended for medical purposes should be studied by every physician interested in active exercises as a means of treatment. Blaikie says truly of MacLaren, that he has done more than anyone else now living to point out the benefits resulting from rational physical exercise, and how to attain these benefits. By his individual efforts and his publications, William Blaikie himself has also done a great work for the advancement of physical culture. His book published by Harper & Bros., in 1883, and entitled *How to Get Strong and How to Stay So*, has enlisted the interest of thousands, and doubtless has lengthened or saved many a life. In 1886 appeared another little work by Blaikie, in the form of a school text-book: *Sound Bodies for Our Boys and Girls*. The exercises given in this book are clear and plain; they are arranged on a natural plan; they are safe, and but little apparatus is required for them—a few dumb-bells, a few wands or sticks, and a horizontal bar, are about all. I have found them to be admirably suited for my purpose in the treatment of some forms of nervous and mental disease.

In the *Therapeutic Gazette* for June and July, 1887, appeared two lectures by Professor Dujardin-Beaumetz, of Paris, in the first of which he considers the physiological effects obtained from exercise and movements; and in the second, after setting forth the methods of medical gymnastics, he discusses the diseases and condition in which they are useful.

A Manual of Treatment by Massage and Mechanical Muscle Exercise, by Joseph Schreiber, M.D., of Austria, translated, with the author's permission, by Walter Mendelsohn, M.D., of New York, has appeared within a few months. This book treats the subject of mechano-therapy from various points of view; and in it are found explicit directions in regard to the technique of massage and its effects, and also a discussion of active movements with and without apparatus. The treatment of many nervous diseases is discussed. The book is a valuable practical treatise, and its publication will do much to advance mechano-therapy in this country; but one of my chief reasons for referring to it is because it contains an extensive chronological bibliography, which can be consulted by those interested.

I am engaged in the preparation of a book on the *Gymnastic Treatment of Nervous and Mental Diseases*, in which will be considered both general and local methods of exercise, and the combination of such methods with other forms of treatment, as for instance, with massage, electricity, hydrotherapy, and medicines.

One of my chief purposes this evening is to call attention to general systematized active exercise. I will also speak of a few special or local exercises designed for particular organs or parts. In a large number of nervous and mental cases, the improvement of general nutrition is the one thing needed to bring about relief or cure, and one of the most effective aids to this end is general, systematized active exercise. The methods chiefly adopted by me are (1) the exercises of Blaikie, with or without dumb-bells, and with the horizontal and parallel bars, or substitutes for them; and (2) exercises with pulley-weight apparatus.

I need only refer you to Mr. Blaikie's best known book for a description of some of the simplest forms of apparatus; to the uses which can be made of the jambs of a door and a couple of pitchfork handles, and for the sketch of a pair of pulley-weights of excellent pattern designed by Dr. Sargent.

A. J. Reach & Co., of Philadelphia, the well known dealers in sporting and gymnastic goods, have constructed a form of pulley-weight apparatus, which is very complete, compact and convenient.

"The Home Exerciser" of C. L. Dowd, of New York, is also convenient and useful, and has been strongly endorsed by Mr. Blaikie for its compactness, strength, lightness, etc. The apparatus of Reach and Dowd consists of an arrangement of ropes, pulleys, and weights, ingeniously put together so as to occupy but little room, and yet to allow the performance of many movements.

"The Home Gymnasium" of John E. Ruebsam, of

Washington, D. C., is well adapted for the office of a physician, or for hospitals and colleges. For a long time I have had this apparatus in use. It occupies more room than the apparatus of Reach or Dowd, but, on the other hand, it is in some respects more complete, having, for instance, combined with it a lounge for massage purposes, and a strong horizontal bar. An apparatus of this kind or one similar should be in every hospital which has not a complete gymnasium.

Elastic straps are sometimes used for gymnastic purposes. According to Dujardin-Beaumetz, Pithery was the originator of this system, which he has styled "opposition gymnastics." Elastic cords with handles attached are firmly fastened in convenient places. By making tractions in different directions, they will bring out almost any muscular action. They can be adapted for the leg or foot movements, as well as to the upper extremities. Some objections, however, apply to them which are not applicable to the pulley-weight apparatus, or to the use of dumb bells, bar-bells, etc. The force used cannot be thoroughly controlled and regulated. Blaikie² in describing and criticising one of the forms of parlor rowing apparatus, has pointed out their defects and shortcomings better than can be done by myself. In spite of their defects, however, he considers them excellent contrivances, if used intelligently.

Movement apparatus run by steam has been largely resorted to in some countries, particularly in Sweden, where the method was invented and introduced by Zander. In this country, it has been used in a few institutions, as at the Surgical Institute, formerly located at Broad and Arch Streets, in Philadelphia, where I have observed its workings. The system has a field of usefulness; it has also certain disadvantages, and needs the most careful supervision, but under the strictest supervision, it may be used with great benefit. To some extent, semi-active and semi-passive or duplicated active movements may be carried out by this machinery, and it can be made to cover the whole range of passive exercises.

The same cautions and contraindications are to be borne in mind in using the exercises either with or without apparatus: probably the dangers of over-doing are to some extent greater with than without apparatus. In the prolonged treatment of patients, some advantages accrue from the use, conjointly or alternately, of exercises with and without apparatus. The interest of variety is added, and the opportunities of the adaptation of movements to special cases and conditions are more numerous. Most of the firms which sell pulley-weight apparatus send with them printed instructions and illustrations; but I must enter a word of caution against the employment of such apparatus by invalids without special medical supervision. Much harm has come to individuals, as well as to the subject of medical gymnastics, by the use of exercises without specific directions.

To a considerable extent, I have personally directed the exercise-treatment of my patients in private practice, and in the nervous wards and the

insane department of the Philadelphia Hospital. Dr. A. H. P. Leuf, instructor in physical culture in the University of Pennsylvania, and Dr. O. H. Beckman and Dr. Mary Willits, assistants in the department of the mind and nervous system in the Philadelphia Polyclinic, have, under my instructions, successfully treated patients for me.

Mr. Clinton A. Dodge, of Philadelphia, is an able and experienced instructor and expert in gymnastics. During the present year he has treated for me, with marked success in most cases, patients suffering from neurasthenia, hysteria, habit chorea, neuritis, lateral spinal curvature, melancholia, etc. Mr. Dodge has also had under his charge the patients of other physicians, and, by their permission, he has given me some of the results of his work.

The director of these exercises should be thoroughly well fitted for his work. He should not only understand the work, but he should combine discretion with enthusiasm in pursuing it. If not a physician, or if a physician without special experience in such work, the treatment should be carefully supervised by some one more competent. The treatment should be carefully individualized. The instructor or director should not undertake too much in one day; and he will soon tire and do badly with his patients if he cannot become interested.

Usually I combine respiratory exercises with the muscular movements. "On the two powers, muscular and respiratory," says Maclaren, "depends the ability to perform all bodily exercises." Inherent nervous force has also something to do with the capacity to perform bodily exercise.

Of course, in any method of gymnastics, respiration must to some extent be exercised. Breathing becomes accelerated, and even painful, under continuous active exercise. In speaking of respiratory gymnastics in this connection, however, I refer to special efforts of breathing—by taking deep, full breaths through the nose and mouth; by forced expiration, as well as inspiration; by counting with a loud voice while holding the breath, etc. It is not my purpose to refer in this paper to the use of pneumatic chambers or other forms of pneumatic apparatus.

It is interesting to recall that the most ancient of books in which gymnastics is discussed, the Chinese Treatise *Cong-Fou, the Art of Man*, speaks particularly of the importance of respiratory gymnastics. Dally and others in the present century, have maintained that respiration is the pivot of every gymnastic exercise, and systems of respiratory gymnastics have been invented (Dujardin-Beaumetz).

Want of respiratory power is certainly either at the root, or is an essential constituent of many morbid nervous conditions. It is remarkable how much individuals differ with reference to their respiratory power, even when of apparently the same muscular ability. The development of the lungs, chest walls, diaphragm, abdominal walls, and other parts; the greater aeration of the blood which is conveyed to weak spinal or encephalic centres; the greater control which the patients obtain over all nervous and muscular effort through these respiratory exercises,

² Op. cit. p. 191.

make them of decided value in cases in which active movements are applicable. On the other hand, it is quite possible that some harm may result from the incautious use of forced respiration. Carried on too long, both as far as giving lessons is concerned, and as far as the weeks and months during which the exercises are continued, it is even conceivable that the air-cells may be unduly strained. Great care should be taken with those who are very weak generally or in a particular part, especially in the lungs or abdominal region.

The treatment should begin with the simplest forms of exercise, and these should be constantly increased and elaborated, as the patients gain in skill and strength. It is wonderful how little some patients can do in this direction. A grasshopper in gymnastics is a burden to them. Five minutes, or even less, is sometimes all the time that can be safely taken at first, and five minutes of actual exercise must sometimes be distributed over half an hour. In most cases the time should never be allowed to exceed twenty or thirty minutes. Often it is important to give resting spells during the process of treatment. Some patients, ambitious to excel or fearing to appear weak, will certainly overdo. Individual peculiarities should be carefully studied. In the majority of cases of nervous and mental diseases in which systematized active exercises are indicated, the danger will be greater of overdoing than of doing too little.

It is an important practical matter to have the air of the room in which the exercises are performed as pure as possible. The room should be well ventilated. It is not necessary, particularly in the case of the nervous and weak, that the room should be without fire; indeed, it is sometimes better that there should be some warmth, but fresh air should be admitted to the room.

Carrying out strictly hygiene in various directions will very much assist in getting good results with the exercises. When possible it is well for the patient, soon after finishing the exercises, to take a sponge bath, with tepid or cold water, according to individual vigor. Good food, regulated exercise in the open air and plenty of sleep are, of course, important.

To illustrate clearly what is meant by simple respiratory exercises in connection with systematized muscular movements, I will quote for you from Blaikie's smaller work two of his very plain directions. I will also quote from the lectures of Dujardin-Beaumetz one of Dally's movements:

"Directions.—1. Stand four feet apart in the aisles, with arms folded behind you, and with one foot about eight inches in front of the other. 2. Now draw the head back and tip it as far down behind as you can. 3. Hold the chin up high. 4. Rest there a moment, then stand up straight again. 5. Repeat this exercise six times.

"Caution.—Breathe deep, full breaths all the time; indeed, always, when exercising, breathe slowly, and as large breaths as you can."

"1. Take a dumb-bell in your right hand and hold it up high over your head. 2. Stand with the chin

up high all the time. 3. Breathe a full, deep, slow breath. 4. Now slowly lower the dumb-bell, not down to your right shoulder, but across, above your head, and down over your left shoulder, as low as you can, till it touches your shoulder, letting your body tip over to the left. 5. Hold it there till you slowly count ten. 6. Now bring it back overhead again. Then do the same with the dumb-bell in your left hand. 7. Do this five times with each hand. "Repeat this five times each day the first week, and twelve times daily after that right along."

One of Dally's respiratory exercises is as follows: He places the patient in a vertical attitude with the back against a wall, then, both arms being extended horizontally in front, the patient forcibly and slowly separates the fingers while he bends the thorax forward; he remains in this position thirty seconds, makes a deep nasal inspiration, and resumes the initial position; then makes a deep expiration, and repeats this exercise six times in succession.

Dujardin-Beaumetz, in reference to these exercises of Dally, remarks that another and simpler exercise will render much service in developing respiratory capacity, viz.: to make the patient count with a loud voice as long as he can without losing breath. Before commencing to count he should make a deep nasal inspiration.

Among the diseases of the nervous system referred to by Dujardin-Beaumetz as calling for gymnastic treatment are muscular atrophies, deformities, chorea, hysteria; ataxic, nervous, and neurasthenic persons; the victims of mental overwork and sedentary life, and idiocy. He also discusses the uric acid diathesis, gout, and diabetes, for which the neurologist is often consulted.

This paper is not founded simply upon theoretical considerations and a study of literature. For several years I have to some extent used systematized active exercises, either with or without apparatus, and during a year past I have had a considerable number of patients on this treatment. My objects, in addition to recording experience, are to call general attention to a too much neglected method of treatment, and to make certain practical suggestions which naturally grow out of a study of the subject. It will be impossible to give details of cases without dragging the paper to a wearisome length. When preparing this paper I was able to put my hands on forty-two such cases, not including those under treatment at the Philadelphia Hospital. Of these cases, twenty-five were treated by the general active exercises, some with and some without pulley-weight apparatus; the other seventeen by some local method for a special purpose. The patients treated by the general exercises included cases of idiocy, insanity, asthma, minor chorea, habit chorea, hysteria, general nervousness, neurasthenia, nervous palpitations, lithæmia, cerebral syphilis, diabetes, curvatures, ataxias and paralyses; those treated by special more or less local methods included cases of hemiplegia or monoplegia, infantile paralysis, lead paralysis, rheumatic neuritis, muscular atrophy, aphonia, and writer's or telegrapher's disease.

For the feeble-minded, for the insane, and even for

criminals, systematized active exercises can be used with great advantage. Those in charge of institutions for the idiotic and feeble-minded in France have in particular given much attention to gymnastics. It is only necessary to recall such names as Esquirol, Bourneville, and Pichery. At the Pennsylvania Training School for Feeble-minded, at Elwyn, in charge of Dr. I. N. Kerlin, I have frequently, and with great interest and pleasure, witnessed the performance of the gymnastic classes. As many as eight separate classes are instructed at one time by as many teachers; and at intervals general exhibitions are given. The classes are graded from those pupils who can only perform the simplest movements, up to those capable of elaborate and somewhat difficult exercises. At Barre, Mass., a gymnasium has been erected, and the children are thoroughly drilled and taught. The same is true of some other institutions for the idiotic and feeble-minded in this country. Much could be said, if time permitted, about the beneficial effects of regulated physical culture in idiocy. For the improvement of the general nutrition of a class of unfortunates usually deficient in this respect, as well as for their training and development, both mental and physical, systemic exercises are of the utmost value. In some of the grades of idiocy attention should be paid to individualizing the treatment by exercise. To a certain extent gymnastics can be used for diagnostic and prognostic purposes in idiocy, observation of those attempting systematized exercises determining the possibilities as to general improvement.

So far as I know, very little has been done with systematized movements in hospitals and asylums for the insane, although I believe insanity affords a great field for such treatment. In the first place, such exercises will do much toward improving the frequently deteriorated physical condition of the insane; secondly, they afford a method of calling out and improving the impaired mental faculties; and thirdly, they constitute another valuable means of supplying to the insane that which all alienists now agree is most important for them—occupation.

"One of the great improvements that has taken place in modern asylum management," says Clouston, "has been that rational physiological outlets are provided for the morbid muscular energy in cases of chronic mania. They are neither confined in their rooms, nor within 'airing courts' enclosed by high walls. They are made to wheel barrows and dig on farms. They are encouraged to dance, and are well fed. Most of them eat enormously, and if they have not enough to eat they fall off, get worse in their mental state and in their habits. Many of them can be got to expend their energy in hard, regulated work, and are the very best workers on the farms and in the laundries of the asylums. They are not all, of course, furiously maniacal. Some of them simply have a slight morbid excess and exaltation of the brain convulsions, shown by restlessness, want of affection, want of self-control, but are not incoherent. If they are kept at work the most objectionable and repulsive parts of the older asylum life are avoided

in a great measure, and the refractory wards, with their noise and danger, are not needed. The scenes with patients, attendants holding them down, and removing them into the seclusion of their own rooms, are few. No doubt there are risks run in the present system to patients and guardians, but I believe the risks are much less in reality than under the old system, for the patients are not so irritable, not so revengeful, and not so dangerous generally."

By means of systematized exercises the insane can be provided with an additional "rational physiological outlet" for their morbid muscular energy, on the one hand, and, on the other, with a rational physiological method of calling them out of their muscular and general torpor.

A few weeks since, in the Insane Department of the Philadelphia Hospital, I started a class in systematized active exercises, selecting eight women suffering from melancholia, and putting in with them to give zest to the treatment two other cases not mentally depressed. Sufficient time has not yet elapsed to determine how much in a curative way can be accomplished by such treatment, but already the experiment has proved to me an instructive one. I found that even these patients, plunged into the profoundest depression, could, by sufficient persistence, be aroused to the performance of some movements; others did moderately well; some very well. The difficulty of fixing the attention of these patients, and yet the possibility of doing it by sufficient effort has been clearly shown. The class has made much improvement in facility and rapidity. Small classes should be formed in large insane asylums, and the system given a thorough trial.

An instructive case of mental disease greatly benefited by systematized active exercises, is that of a young man who, at the age of 21, broke down mentally, as the result of too great output of mental energy and physical exertion in business. He became depressed, and soon developed delusions of suspicion, believing that people were watching and following him. In a few weeks, under rest, the depression disappeared; he again attempted business, but became excited, and then developed ambitious delusions. He was admitted to an asylum for the insane, and in three months came out, apparently well. In brief, his subsequent history for eight years was that every year, late in the spring or early in the summer, he had a period of excitement, followed by one of depression, each lasting about three months. About three years ago he began the use of systematized active exercises, after the method of Blaikie and others. He has since persevered with them, at the same time paying attention to diet, sleep, and general hygiene. On a few occasions he has had touches of elation, lasting only a day or two, but he has been able, owing to his increased physical and mental strength, to resist with success the beginnings of such attacks, and he has been entirely without the regular periods of depression and elevation for nearly three years.

An experiment made at the New York State Reformatory, at Elmira, has been frequently referred to of late by the medical and general press. An ex-

perimental class in physical culture was formed of twelve men, who for a period ranging from one to two years, had made no appreciable progress in their school work, and who seemed incapable of prolonged mental effort, yet could not, strictly speaking, be considered mentally unsound, or representatives of a class known as feeble-minded; with the object of ascertaining, if possible, if physical culture, as comprised in frequent baths and massage, and daily calisthenics under the care of a competent instructor, would not result at least in the partial awakening and stimulation of dormant mental power. Increased mental activity rather than muscular development was to be the gauge of success or failure of the experiment.

Dr. H. D. Wey, physician to the Reformatory, in reporting the results of the experiment, says that to those who are thrown in daily contact with the men, a mental awakening was apparent. They became interested in their studies and strove to appear to the best advantage in the school-room. Their advancement in their studies was not steadily onward, but rather intermittently progressive. It will be interesting to note in the future, as Dr. Wey remarks, whether the good results are permanent; but whether they are or not, the step is one in the right direction, and is to be commended to penologists everywhere.

(To be concluded.)

PROGNOSIS IN VALVULAR LESIONS OF THE HEART.

Read before Chicago Pathological Society, December, 1887.

BY JOSEPH M. PATTON, M.D.,

OF CHICAGO.

The most interesting question in connection with cardiac valvular lesions, and one that requires the most accurate knowledge of the physical condition of the heart, and of the changes that have taken place, and of those which are yet to follow, is the question of prognosis.

The incurability of organic disease of the heart, confines the management of these cases to one object, namely, how long can the heart be made to perform its function? To this end it is necessary that an intelligent prognosis be made, based on the following points: *First*. The seat of the lesion and its character. *Second*. The physical changes already effected by the lesion. *Third*. The histological changes resulting from these altered physical relations.

The careful study of these questions, and of the liability to further changes, both physical and pathological, in which any or all of the above-named conditions may be factors, will enable us to make a reliable and scientific prognosis. The effect of location on the prognosis depends on the time of life at which the trouble begins, and on the character of the lesion.

In early life the mitral valve is generally the one at fault, and the lesion is most often regurgitant. This is due to the fact that mitral disease in young subjects is generally secondary to acute endocarditis, and to the high blood pressure on the under side of these

valves. The prognosis in these cases depends on the power of compensation, and is better in regurgitation than in stenosis. Mitral disease at middle life, or subsequent thereto, is generally secondary to some other form of cardiac disease, and the prognosis is bad.

Disease of the aortic valves generally occurs in adult life, probably owing to the tendency toward inflammation of the aorta, immediately around the sinuses of Valsalva, during this period.

The prognosis here is better in stenosis, than in regurgitation, aside from the liability to cerebral embolism, which Niemeyer limits to cases of regurgitation, I believe that embolism is not of very frequent occurrence as I have met with only one instance, and that in a case of stenosis in a girl 12 or 14 years of age.

Second, as to the physical changes in the heart effected by the lesion. And in this connection cardiac hypertrophy is not to be considered as a diseased condition, but as the necessary and only remedy which Nature can give to a pump whose power is being overtaken by reason of a faulty valve.

In mitral regurgitation there is first dilatation of the left auricle, but this is generally slight, as the intra-auricular pressure is not very much augmented. The increased pressure in the pulmonary circulation is immediately relieved by hypertrophy of the right ventricle, which is a simple hypertrophy, and not eccentric, as is generally stated. When this compensation takes place the prognosis is good, and remains so until the hypertrophy becomes eccentric from degeneration of the right ventricle. The muscle being no longer able to withstand the increased intra-ventricular pressure, the prognosis then becomes grave. The increased pressure in the left auricle and pulmonary veins throws the blood into the left ventricle with more than usual force, hence there is slight dilatation and hypertrophy of this ventricle, which equalizes the arterial circulation. In some cases complicated by extensive myocarditis, dilatation of the left auricle, and ventricle, may be so rapid that the patient dies before compensatory hypertrophy can be obtained. In a recent case of this nature in a child 8 years old, the heart muscle was very weak from myocarditis. The patient was very anæmic, yet under treatment the improvement was very slow, but steady for several weeks, when, after taking a long walk and overtaking the heart muscle, rapid dilatation took place and the child died in a week or ten days.

In mitral stenosis there is dilatation of the left auricle from the increased pressure necessary to force the blood through the constriction, and though the right heart compensates for the obstructed pulmonary circulation, the prognosis is rendered more grave than in regurgitation, because of the over-distension of the left auricle, which is but moderately supplied with muscular tissue, and is unable to withstand it.

In aortic disease the left ventricle furnishes the compensating power. In stenosis, its first effect is hypertrophy of the ventricle. This fully controls the interference with the blood current, and all goes well so long as the muscle retains its integrity.

¹Annual Report of the New York State Penitentiary, at Elmira, for the year ending September 30, 1886.

The prognosis at this stage is good, as a patient may remain in this condition for many years, totally ignorant of any cardiac trouble. Sooner or later muscular degeneration sets in, as evinced by ventricular dilatation, as the muscle is now no longer able to withstand the blood pressure, and as the dilatation becomes advanced the mitral ring is stretched, insufficiency of that valve results, and this gives an obstructed pulmonary circulation at a time when muscular degeneration prevents compensation by the right heart, therefore, as soon as mitral regurgitation occurs in these cases, the prognosis gets grave.

In aortic regurgitation the first effect is dilatation from the direct force of the reflex current impinging on the walls of the left ventricle while it is relaxed, also, from overdistension by the addition of the regurgitated blood to that normally received from the left auricle. This is followed by hypertrophy, which is eccentric. The prognosis at this stage is not as favorable as in the same stage of stenosis, that is, when compensation is obtained, for the reason that in stenosis when the hypertrophy has fully overcome the obstruction at the valve it may remain stationary so long as there is no change at the valve, or in the integrity of the muscle, while in regurgitation the distending force is constantly present, and the hypertrophy must be progressive. It is for this reason that we find such immense left ventricles in some cases of aortic regurgitation. As soon as the hypertrophy fails to arrest the dilatation, mitral regurgitation ensues, as in stenosis, but is reached in much less time, as a rule, hence the prognosis is even more unfavorable than in the same stage of aortic stenosis.

The statement made by some authors that hypertrophy of the right heart in disease of the left side, and of the left ventricle in aortic stenosis, is eccentric, I believe to be erroneous. Niemeyer claims that simple hypertrophy is rare, and only obtained in such interference with the circulation as is given in Bright's disease or chronic asthma, or bronchitis. I do not recognize any difference between the effect on the left ventricle from the increased vascular pressure in Bright's disease, and the effect on the right ventricle in pulmonary obstruction from mitral regurgitation, or on the left ventricle in aortic stenosis before degenerative changes begin.

Histological Changes.—This consists in the hypertrophy of the muscular tissue, which results from the increased nutrition to the heart muscle, as demanded by its extra labor, similar to like changes in other muscular tissues under like circumstances. I believe this to be a simple increase in volume of the primitive muscular fasciculus, and not a numerical increase as is claimed by many. This increase in volume of the fasciculus may be caused by swelling of the sarcomeric elements of which the fibrillæ are composed, or possibly, increase of the number of fibrillæ within the sarcolemma, if there were actual increase in the number of fasciculi, with their investing sarcolemma, there would also be increase in the number of muscular bundles with their perimysium, and after degeneration of the muscular fibre this would leave an excess of the areolar tissue of which the perimysium is composed. This I have not been able to see.

The pathological changes taking place are those of degeneration from defective nutrition, and are followed by dilatation of the organ, by reason of lessening of the resisting power of its muscle.

The interference with the coronary circulation by reason of the physical changes in the heart by atheromatous degeneration of the aorta or coronary arteries by inability of the arteries to carry enough blood to supply the increased volume of muscle, causes a fatty degeneration of the primitive muscular fasciculi. The endo-cardiac blood pressure now exceeds the contracting power of the muscle and rapid dilatation follows.

The prognosis then, in a heart that has been hypertrophied, becomes grave with the appearance of symptoms indicating dilatation, for now it is a question of only a short time until asystolism of the heart is developed, and under such conditions the heart cannot long perform its function.

A word as to the danger of sudden death from organic disease of the heart. I do not believe this danger is sufficiently imminent to warrant us in placing it among the elements of an unfavorable prognosis. There is no influence in the heart, *per se*, tending to cause sudden cessation of its action. Cerebral embolism, it is true, may cause sudden death, but this, as already shown, is not frequent.

The formation of a ventricular clot from healthy blood is not possible, except when the heart has developed asystolism, in which case the prognosis is already rendered grave, because of the physical condition of the heart. I have never seen a sudden death from organic heart disease where the diagnosis was assured and the cause of death referable to the heart. And were the actual cause known of the many sudden deaths which are laid at the door of this hardworking and long-suffering organ, I believe the vast majority would be found due to causes extraneous to the heart, probably some circulatory disturbance, or tissue degeneration of the nervous centers, causing a lack of the proper innervation of the heart. The fact at least remains, that in organic disease of the heart sudden and unexpected death is a marked exception to the general termination, and if this be true in diseased conditions, what cogent reason can be given for attributing sudden death to the heart, in persons who have never given any evidence of cardiac disease.

From the foregoing we would derive the following conclusions:

The prognosis when compensation is obtained is better in aortic stenosis and in mitral regurgitation than in aortic regurgitation, or mitral stenosis. A person with either of the former lesions, moderately severe and fully compensated for, may live 20 or 30 years and suffer no inconvenience therefrom.

In aortic stenosis intercurrent disease of the lungs is not so dangerous as in mitral regurgitation, hence the prognosis in the former is somewhat better.

In aortic regurgitation, and in mitral stenosis, the prognosis is not so good, because the eccentric hypertrophy in the former, and the dilatation of the left auricle in the latter, renders perfect compensation difficult.

The more pronounced the lesion the more grave the prognosis, in direct proportion to the increase in intra-cardiac pressure.

Double lesions at one valve, or two distinct lesions at different valves, which have begun at the same time, render the prognosis grave in direct proportion to the increased liability to dilatation of the different cavities.

SALICYLATE OF AMMONIUM FOR FEVERS.

BY D. M. WICK, M.D.,
OF N. W. HARTFORD, IOWA.

Last winter, in February, I was treating L. P., a boy of 6 years, for remittent fever, the temperature varying from 102° to 103° . I began with the classical course: hydrarg. chlor. mitis to arouse the secretions, quinine as an antiperiodic, and veratrum and spits. æth. nitrosi as a febrifuge. At the close of the second day of treatment, he broke out on face and neck with a bright scarlatinoid eruption, resembling very much that of scarlet fever. The parents became greatly alarmed, fearing that the boy had scarlet fever. Assuring them that he had not, and that the eruption was caused by the powders, I continued the same treatment. The next day the eruption was still more diffused over the whole surface of body, with intolerable and incessant itching and fever as high as at first visit. For another day (the fourth) the same treatment was persisted in, only to aggravate the erythema, cause cedema of face, hands and feet, and with the itching, that had persisted from the first appearance of the quinine exanthem, made my little patient more restless and miserable. The fever had now increased to 103° morning and 104° evening. I had never used salicylate of ammonium, but thought this would be an opportunity to test its value as an antipyretic. I had read the papers of Drs. Jackson, Barnett and Sullivan. Leaving off all the former medicines, I dissolved 3ss salicylate ammonium in 5ij aque and ordered 1 teaspoonful every two hours.

I saw the patient again in eight hours, and found him with temperature reduced to 99.5° , resting quietly and sweating profusely. Continued the dose the same and lengthened the interval to four hours. Next day the temperature was normal, tongue becoming clear, eruption disappearing, and the boy feeling so well that he wanted to be up and dressed. He made a rapid recovery.

The next case in which I used the new drug was also one of remittent fever. A boy, 5 years old, had been sick nearly one week when first seen. I put him on the orthodox treatment, and continued it one week, during which time his fever was never below 102° nor above 104° . He had a hot, dry skin all the time.

I again dropped all other drugs and gave salicylate of ammonium, gr. ij, in water every two hours. In about eight hours his temperature fell to 99° and he was bathed in perspiration. Continued the dose once in four hours. Saw the case next day and found no fever, tongue clean, skin moist, and the boy in every respect improved. He had no relapse, and was soon able to be around.

May P., a girl of 11 years, had measles. The disease pursued its usual course and the eruption receded as in other cases. But the fever, which had ranged high throughout (from 102° to 104°) continued. An active diarrhoea set in, her tongue was dry and heavily coated, and sores was on the teeth. She was now in a semi-delirious condition, with a temperature of 105° . I had no trouble in controlling the bowels with mineral acids and small doses of opiates. Despite the frequent bathing, quinine, gelsemium and aconite, the fever kept on as high as ever.

After five days of this course she was no better. I saw that her bowels were more quiet. The skin was dry, temperature 105° , with considerable nervous disturbance, and still semi-conscious. As the case was assuming a very serious aspect, I again resorted to the ammonia treatment. Dropping all other medicines as in the former cases, I ordered 2 grains every hour until she should sweat. The nurse told me the next morning that after giving the fourth dose she began to sweat, and by the time the fifth was to be given, her clothing was so thoroughly saturated that the time was lengthened to four hours. Her temperature was normal, pulse soft and regular, though weak, tongue moist for the first time in five days and showing evidence of becoming clean. From this time she gained rapidly without one unfavorable symptom, and in one week was up, and soon recovered.

Netta B., a frail and delicate girl of 7 years, was attacked with whooping-cough, which ran a severe course for two weeks and then, insidiously, the case took on broncho-pneumonia. Temperature rose to 104° , breathing hurried, oppression excessive, the lips and face turgid and cyanotic, pulse rapid. Gave her a mixture of carbonate of ammon., acetat. potass., syr. ipecac, and tinct. nux vomica as a cardiac and respiratory stimulant; alternating with small doses of quinine. After using this treatment four days, the fever not abating and other symptoms becoming worse, I again quit all other drugs and administered 2 grains of salicylate of ammonium every two hours until free perspiration occurred, which was after the sixth dose. The fever subsided, respiration became easy and expectoration abundant. The temperature did not return above 101° for several days. Although it is a peculiarity of broncho-pneumonia to lull, and give a deceptive promise of amendment, I am convinced that the remedy acted promptly in lessening the fever; for after the second and third invasion of the bronchial tree, with temperature of 104° and 105° (that after four weeks proved fatal), the salicylate of ammonium each time brought the temperature down to 101° or 101.5° .

I have given this form of ammonium in other cases, but did not have the opportunity to watch its effects as in the above. In the first case reported, I was forced to seek some other remedy, from the unpleasant effects of quinine. In the second, I had not yet become interested enough in the new drug to give up the old form of medication; while in the third, I thought the little girl too dangerously sick to try new remedies. In the fourth I was desirous to test its virtues only after first using the ordinary plan of treatment.

What is there in salicylate of ammonium that arrests high fevers so abruptly? Had the quinine, in the two intermittent fever cases, neutralized all malarial poison and, when the salicylate was given, ushered in the sweating stage? Or, was it the germicidal, antiseptic and antipyretic powers of the salicylate that acted so happily? May it not have been the supplying the nitrogenous waste with the ammonia? There is a *something* in its make-up that subdues arterial tension and chemically destroys the microorganisms in the blood. Its effects seem to be as marked in one case as in another, whether malarial, measles, or whooping-cough complicated with broncho-pneumonia. Professor W. S. Haines once said to his chemistry class that he believed it possible to so perfect the science of chemistry, and so thoroughly understand disease, that we may neutralize and destroy the disturbing element in the system with the proper chemical, timely and scientifically administered. The three patients recovered rapidly, while in the one with whooping-cough the fever was greatly reduced three different times.

The drug is not stimulating, but rather depressing, and should be carefully watched when given to children in doses of from 2 to 3 grains every one or two hours, and should depression occur, use some diffusible stimulant. I have thus far used Mallinckrodt's preparation and given it in pure water, which makes a pleasant medicine that children take readily.

MEDICAL PROGRESS.

OPEN INCISION AND IMMEDIATE RECTIFICATION IN CONGENITAL CLUB-FOOT.—In an article on this subject read before the New York Academy of Medicine, on Dec. 12, Dr. CHARLES N. DIXON says:

A description of the treatment of club-foot will be facilitated by a division of the deformity into the following three classes: 1. Those that can be easily reduced by manipulation. 2. Cases in which there are contractures of fasciæ and tendons. 3. Cases in which all the tissues are greatly shortened.

It is a common observation that certain cases of club-foot in young children, when handled and manipulated, can easily be placed in a normal position; whereas in other cases in which the deformity is less marked, little can be effected without the aid of the knife. It is only in this first class of cases that manipulation and fixation will lead to a permanent result. In the great majority of cases it is but a waste of time to attempt to treat the deformity without division, at least, of the tendo-Achillis and plantar fascia.

It has been my practice, previous to any operative interference whatever, to subject the foot to a thorough process of manipulation and in this way discover the amount of resistance that it is necessary to overcome with the knife, and at the same time eliminate all fibrous bands and adhesions that readily yield to the force of the hand. All who have had much experience in the treatment of talipes must

have observed, that even in the infant under chloroform the clubbed foot, when pressed by the hand or other force, into the best position it can be made to assume, immediately on removal of the pressure springs back into its abnormal position. It is, however, possible by a few minutes' manipulation and pressure so to overcome the resiliency of the tissues that the foot does not readily spring back into its old position. If the foot be grasped by both hands of the surgeon and gradually but persistently unfolded and twisted into a normal position, at first it gradually yields and becomes improved in position, but soon the shortened structures on the inner side of the foot become tense and refuse to yield; it now becomes a contest between the muscles of the surgeon and the resistance of the deformed tissues. If the force be steadily continued and even increased, not by fits and starts, but continuously and persistently, the soft tissues still further yield, the bony surfaces glide on each other, and the foot assumes a position more nearly approaching the normal than would have been thought possible. If at any time during this operation there seems to be danger of fracturing the bones, the force used should be intermitted but not entirely let up. If the operation is well performed, at the expiration of ten minutes or so the elasticity of the tissues seems to be exhausted and the foot lies limp and flaccid, without that tendency to spring back which it had previously possessed. More can be accomplished in ten minutes by manipulation in this way than by ten weeks of plaster dressing according to the old method. It must be remembered, however, that only the simplest cases can be successfully treated without operation, but this preliminary manipulation should form a part of the treatment of club-foot in all its various degrees. Most cases will require at least division of the tendo-Achillis and plantar fascia, and the general rigidity of the foot should be the guide in determining the further extent to which the tendons, fasciæ, and ligaments need division.

Whenever the tense structures on the inner side of the foot prevent its unfolding and rectification, owing to their short condition, they should unhesitatingly be divided by open incision. In this way the time necessary to a cure is shortened, the tendency to relapse is diminished, and the treatment of congenital talipes is placed on a sound anatomical basis. As Dr. Phelps puts it: "More can be done with a scalpel or tenotome in five minutes than can be accomplished in weeks and often months by all the mechanical appliances known to surgery."

In the second and third classes of cases operative procedures are always necessary. As Dr. Lewis Sayre well says, "contractured tissues cannot be stretched." The distinction between these two classes of cases should be left to the judgment of the surgeon.

It should be our aim to produce rectification of the deformity, with as little operative procedure as possible. In many cases the subcutaneous division of the plantar fascia, together with one or more tendons, will be all that is necessary, and after their division the distortion can be reduced. But if after

subcutaneous division of these structures the foot cannot be replaced, it is better to perform the open operation and divide the tendon of the tibialis posterior, the internal lateral ligament, and all other tissues which offer resistance to the complete redressment of the foot, if necessary, extending the incision to a linear section of the astragalus and other bones of the tarsus.

Operation.—The method of operation is as follows: Thorough antiseptic precautions being observed, so as to secure organization of the blood-clot according to the Morris-Schede method. The foot is rendered bloodless by means of an Esmarch bandage. First, the tendo-Achillis is divided subcutaneously, and the foot thoroughly flexed, so as to overcome the equinus. Then an imaginary line is drawn from the process of the internal malleolus to the tuberosity of the scaphoid bone. Taking the middle portion of this line, an incision is made downward and slightly backward, across the inner side of the foot, following the direction of the transverse wrinkle for a distance of an inch and a half. The nerve and artery may be protected by being drawn to one side of the wound by means of a blunt hook, which is held in the hand of an assistant. The foot is gradually unfolded, and the shortened and contracted structures are divided as they present themselves and offer resistance to replacement, in the following order: skin, connective tissue, tendons of the tibialis posterior, flexor longus digitorum, abductor hallucis, flexor hallucis longus, together with the internal lateral ligament. A tenotomy should then be glided beneath the skin, so as to divide the plantar fascia and the muscular structure of the flexor brevis digitorum. These tissues should be cut by a series of nicks rather than by a prolonged incision. The wound is allowed to fill with coagulated blood, and dressed with Lister's protective, sublimate gauze, and a plaster bandage. The first dressing is allowed to remain four weeks, at the end of which time the wound should be healed.

After-treatment.—After the wound is entirely healed, a water-glass shoe is applied, with which the patient is allowed to walk. The glass shoe, if it does not become wet, retains its shape for six to twelve weeks. Hausmann, of Hamburg, recommends for the after-treatment a shoe which is made as follows: The toes are thoroughly padded with cotton-wool, then the tin is covered with a woolen stocking. A strip of tin one inch in width is applied along the dorsum of the foot, in order to protect the skin when the shoe is cut off. A sole formed of stiff paste-board is fitted to the foot, and over this another stocking is fitted. A plaster bandage one and a half inches in width is then applied to the foot, so as to form a shoe extending up to the ankle-joint. While still moist, the plaster cast is cut down the dorsum and sprung off. The shoe thus formed is thoroughly dried in an oven, and covered with leather, so as to make a shoe which can be laced up and removed from time to time.—*Medical News*, Jan. 21, 1888.

EXCISION OF THE TONGUE FOR EPITHELIOMA.—BARWELL describes his method and its application in a recent case as follows:

The method is this. Strictly in and along the middle line an opening is made about one-third of an inch long immediately in front of the hyoid bone, through the raphe of the mylo-hyoid. The genio-hyoid and genio-hyoglossus muscles are separated with the handle of the scalpel until the deep surface of the mucous membrane forming the floor of the mouth is reached. By means of Liston's needles carried under this membrane to, or even beyond, the last molar teeth, threads are passed on each side into the buccal cavity, which in their turn draw flexible wire-twist, first into, then out of, the mouth, in such wise as to surround the base of the tongue as far back as one will. An écraseur working with this wire severs that part of the organ. Then the loop of another écraseur is passed between the teeth, pressed well down on the first incision, and divides the structures beneath the tongue.

In this way, then, I operated on August 6th, on George G., aged 47, who had a large epithelioma on the left side of the tongue, behind its middle; the induration, however, extended very far back and across to the other side of the organ. No enlarged glands could be felt. The ulcer was extremely sensitive; eating and even swallowing caused pain and trouble to him, while the very foul condition of the mouth took away all desire for food. During the operation but very few drops of blood were lost. Very soon after recovery from the anæsthetic he wrote on the slate that he was pretty comfortable. Aug. 8: there had been a copious flow of saliva and other secretions from the supra-hyoid wound. The patient daily took a large quantity of milk and leaf tea, with, he says, more ease than he had done for a long time. The wound was frequently syringed and the mouth rinsed with a 1 in 60 solution of carbolic acid, and the breath was hardly at all tainted. 24th: On the 16th the man could comfortably eat finely minced meat, and had gained flesh since the last report. 30th: He left the hospital, the tongue wound being firmly cicatrized on the 27th. He was able to eat very well, and for the last ten days has been able to enunciate with considerable distinctness.—*Lancet*, December 31, 1887.

OSTEOTOMY FOR RUPTURED PATELLAR TENDON.—In the case of a woman, æt. 60 years, who ruptured the inferior ligamentum patellæ, Ceci performed osteotomy by a new method. When he saw the patient two days after the accident the knee was considerably swollen, there was a hard lump under the patella, and on the tuberosity of the tibia, where the tendon is attached, was a gap. Compression was tried for four days without result, and Ceci then made an oblique incision from the internal condyle of the femur to the head of the fibula. On opening the joint the capsular ligament along the whole anterior and lateral border of the tibia, including the internal ligament, was torn from the tibia; the inferior patellar ligament was drawn up and fixed by fresh, easily broken-up adhesions. After washing out with a 2.5 per cent. solution of carbolic acid, Ceci bored obliquely through the lower border of the tuberosity of the tibia, by means of his bore

for suture of the patella, carried a strong silk thread through, then 3 cm. above the site of the rupture, through the patella ligament, and tied it. Several fine sutures were carried through the ruptured border of the capsule. The skin was then sutured. No drainage. The patient recovered without fever, with perfect, functional use of the knee.—*Centralbl. f. Chirurgie*, No. 51, 1887.

AMYLENE HYDRATE AS A HYPNOTIC.—DR. AVILLES draws the following conclusions from recent trials of this drug in Riegel's clinic:

1. Amylene hydrate is a hypnotic upon whose action one can depend when a sufficient dose is given. Comparative trials have shown that amylene hydrate is stronger than paraldehyde, but weaker than chloral.

2. Amylene hydrate acts on people that are accustomed to hypnotics, though it is not necessary to give larger doses than 4 grams.

3. Sleep usually comes on quickly, and without a stage of excitation. This sleep is deep or light according to the size of the dose, though it is always easy to awaken the sleeper. When the person is awakened he is always clear, answers readily, and goes to sleep again if left undisturbed.

4. With small doses the sleep lasts from two to three hours, and with large doses from six to eight hours (the larger doses being from 2 to 3.2 grams).

5. The respiration is not changed by the drug.

6. Sphygmographic tracings taken by Riegel on different patients showed that the use of amylene hydrate does not cause any change in the pulse or blood-pressure except those that are normal to normal sleep.

7. The patients never have the bad taste and smell after taking amylene hydrate, when they awake, as they do after taking paraldehyde.

8. It is not known yet whether a habit is formed. But in none of the cases observed was it necessary to increase the dose after the drug had been repeatedly given.

Unpleasant secondary effects were observed in only two cases, and only three patients refused to take the drug. It was used in different internal diseases, and had an especially favorable effect in icterus and icteric itching. For these affections Eichhorst has recommended chloral, but amylene hydrate is better because it does not cause that weakened condition of the heart that chloral does. No contraindications to the use of the drug were found. In severe disturbance or trouble of the stomach clisters are recommended, and the following formula may be used: 3 grams of amylene hydrate, and 25 grams each of distilled water and gum arabic.—*Deutsche med. Wochenschrift*, No. 1, 1888.

LIGATION OF THE COMMON CAROTID IN A DIPHTHERITIC SCARLATINOUS ABSCESS CAVITY.—SFLENKOW reports the case of a girl, aet. 9 years. On the third day of an attack of scarlet fever she was taken with diphtheria, and on the sixth day there was considerable swelling of the cervical glands on the right side. After a week a large fluctuating abscess was opened by a small incision, and a thin drainage tube

put into the cavity. On the third day the dressings were stained with blood, which spurted out in a stream when the dressings were removed. The hæmorrhage was arrested by pressure. The common carotid was tied in two places at the level of the cricoid cartilage and cut. There was left-side paralysis for about three weeks, which was still partial after six months, and at this time there were great weakness, chordic disturbances, and inability to concentrate the attention. The patient answered questions slowly, and stuttered somewhat. The intellect, though not brilliant before, was weak. There was no clear pulsation on the right external maxillary and temporal. The left hand was held in extreme flexion and pronation, the fingers balled into a fist, and the thumb drawn into the palm. The patient could change this position only by a strong effort of the will. During sleep the hand and fingers were spontaneously relaxed, to return to the abnormal position again when the patient awoke. A slight blow on the dorsum of the finger caused momentary extension. The muscles on the radial side of the forearm were somewhat atrophied. The left foot was turned inwards slightly, and in walking the right leg was dragged a little.—*Centralbl. für Chirurgie*, Jan. 7, 1888.

CHLORIDE OF DRUMINE.—DR. REID, the introducer of this substance to the profession, reports his use of drumine as follows:

A short time ago I had occasion to treat a severe case of sciatica. Having had a little drumine chloride on a filter paper I scraped it off, dissolved it in water, and then filtered it. I injected min. x. of the solution, and in half an hour 5j of solution (strength unknown; as the powder was mixed with filter paper, it was weak, but it paralyzed the sense of taste on the tongue). There was soon great relief, and ease of movement replaced the previous stiff back, so that the patient walked easily down stairs in an hour, when the jarring of ordinary walking formerly gave him much pain. No local or after effects appeared, although the powdered drug was six months old.—*Australasian Medical Gazette*, October, 1887.

ANTIPIRYN IN EPILEPSY.—LEMOIGNE concludes that in most cases of epilepsy antipyrin is inert, and that the cases in which benefit may be expected from it are:

1. Cases in which epileptic seizures are induced by menstruation.
2. Cases in which paroxysms are induced by irritation of intestinal parasites.
3. Cases in which the attacks are attended by migraine.

In these cases antipyrin in doses of grm. 2 a day is superior to bromide of potassium.—*Gazette Méd. de Paris*, Dec. 24, 1887.

HYPODERMIC INJECTIONS OF CHLORIDE OF SODIUM IN COLLAPSE.—DR. ROSENBUSCH, writing in a Polish journal, describes some cases of collapse from hæmatemesis and hæmoptysis in which hypodermic injections of chloride of sodium acted most satisfactorily.—*Lancet*, Dec. 24, 1887.

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CHRONIC ENDARTERITIS AS A CAUSE OF
SUDDEN DEATH.

A valuable contribution to legal medicine has just been concluded in the *Nordiskt Medicinskt Arkiv*, Bd. xix, Nr. 15, by DR. ALGOT KEY-ÅBERG, of Stockholm, the title of which is, in English, "Contributions to the Knowledge of the importance of Chronic Endarteritis as a Cause of Sudden Death." This valuable memoir will be published in the first number of the *Vierteljahresschrift für gerichtliche Medizin* for 1888, and will be thus more accessible to the profession.

In the first part of his paper, which is a sort of introduction, the author notes the differences in the conception of the term "sudden death" from the physiological, pathological, and medico-legal aspects, and points out the special importance of the medical jurist recognizing the various anatomical alterations of the human organism that may cause sudden death. This part of the paper contains an interesting historical review, showing the different opinions that have been held as to the nature and frequency of these anatomical alterations.

The author then considers statistically the importance of chronic endarteritis (*Endarteritis chronica deformans*, Virchow) as a cause of sudden death, as the term is understood in legal medicine. The material upon which this part of the paper is based was furnished by 852 autopsies made at the Medico-legal Institute of Vienna between June 1, 1881, and June 1, 1886, on persons past the age of 14 years that died suddenly. The following is a résumé of his statistical researches made in the Institute:

1. In 74.5 per cent. of all the cases of sudden death, from a medico-legal point of view, after the age of 14 years, death was caused by *endarteritis chronica deformans* in one of its sequelæ.

2. In the cases of sudden death mentioned, the sequelæ were, with rare exceptions, one of the following affections: paralysis of the heart, rupture of the heart, rupture of an aneurism of the aorta or of one of its branches outside the skull, rupture of the aorta (comprising dissecting aneurism), and intracranial hemorrhage. Of 635 cases there was only one of embolism of the cerebral arteries; in all the others one of the causes just mentioned was the cause of death.

3. In the cases mentioned, paralysis of the heart was the cause of death in 71.1 per cent., rupture of the heart in 2.4 per cent., rupture of aortic aneurism, etc., in 8.7 per cent., rupture of the aorta in 2.5 per cent., and intracranial hemorrhage in 15.3 per cent. of the cases.

4. The cases of natural sudden death from a medico-legal point of view, after the age of 14 years, gave the following proportions as regards the lethal causes: paralysis of the heart 52.9 per cent., rupture of the heart 1.7 per cent., rupture of aneurism of aorta, etc., 6.4 per cent., rupture of the aorta 1.9 per cent., and intracranial hemorrhage 11.3 per cent.

5. In the cases under consideration, in which sudden death was caused by chronic endarteritis, the male sex furnished decidedly the larger number. This difference was not always so well shown as in the cases in which death was due to paralysis of the heart, or to rupture of an aneurism of the aorta. In the first kind of cases the male sex furnished 64.5 per cent., and in the second kind about 79 per cent.

6. Considered as a cause of paralysis of the heart and of sudden death from rupture of an aneurism of the aorta in the male sex, chronic endarteritis cannot be attributed to senility, since the majority of the fatal cases in these two categories of affections occur between the ages of 40 and 44 years.

7. As a rule men die from paralysis of the heart due to chronic endarteritis at a less advanced age than women, and it is strongly probable that the same is true of the deaths from aneurism of the aorta. It seems then that we may draw the conclusion that chronic endarteritis is developed, as a rule, more rapidly, and that it is more harmful, to men than to women.

8. Intracranial hemorrhages show, to judge from the small number of cases as compared with those of

rupture of the heart and of the aorta, about the same differences in the sexes as just noted.

9. Social position and calling do not seem, as such, to have any appreciable importance in the etiology of any of the cases of sudden death from chronic endarteritis.

10. There are more sudden deaths from paralysis of the heart during the first and last three months of the year than during the other six months; the winter season furnishes the greater number of such deaths.

11. As a rule, deaths from chronic endarteritis are more frequent during winter; next in order of frequency are autumn and spring, and, lastly, summer.

There is a possibility, that the author recognizes, that the conclusions drawn from his observations may be influenced by local circumstances, and that in other places than Vienna they might be different.

In the concluding portion of his memoir the author considers the presence of chronic endarteritis in the coronary arteries and at their openings into the aorta as a cause of sudden paralysis of the heart. And it is a noteworthy fact that in 33 cases of paralysis of the heart due to chronic endarteritis, which he examined post-mortem, in 22 there were sufficient reason for regarding the paralysis as the effect of arteriosclerotic changes in the coronary arteries or their mouths. He gives the details of 13 autopsies in which death must have been considered as caused by paralysis of the heart exclusively attributable to the arterial sclerosis in question. Particularly interesting is the account of the microscopic examinations in these cases, in which the results arrived at are at variance with the opinions generally held especially in regard to fatty degeneration of the heart. He makes five special points: 1. In 4 cases of 13 fatty degeneration and necrotic softening of the muscular tissue were absolutely wanting. 2. In 2 cases of myomalacia of the heart there was fatty degeneration of the muscular tissue in 1 only, and then only in the immediate vicinity of soft region. 3. In 2 cases the isolated trabecule of the left ventricle, and in 1 case one of the papillary muscles of the same part, showed fatty degeneration with coarse granulations. 4. In 3 cases, in that part of the wall of the right ventricle situated below the trabecule, there was finely granular fatty degeneration between the bands of interstitial fat, while at the same time, in 2 cases, smaller regions contiguous to parts of the left ventricle altered in another manner, presented the degeneration mentioned; and in the third case the papillary muscles of the left ventricle showed finely granular fatty degeneration. 5. In 2 cases only of the 13 did the

muscular tissue of the heart show fatty degeneration over a greater or more general extent. In the one of these cases the degeneration had invaded the whole region corresponding to the ramification of the left coronary artery, and in the other the whole heart was invaded by the finely granular form.

A QUESTION OF PROPRIETY.

Is it proper for a medical reporter having access to the ordinary clinical lectures in a hospital, to attempt to report in full the clinical lectures of a member of the hospital staff, and furnish the same for publication, without submitting a line of his manuscript to the lecturer for his approval? Is it proper for editors or publishers of medical journals to receive and publish what purport to be verbatim reports of clinical lectures without any evidence that such reports have been approved by the lecturer, and without even allowing him an opportunity to read the galley proofs?

We are constrained to ask these questions, partly from personal interest, but more for the benefit of lecturers and editors in general. Three times in quick succession the editor of this journal has been surprised, on taking up as many exchange journals from distant cities, to find each opening with a clinical lecture by himself, reported by William Whitford, M.D. The first in order of time was on "Typhoid Fever;" the second on "Acute Pneumonia—Tuberculosis;" and the third on "Broncho-Bronchitis," for the meaning of which we shall have to rely upon the reporter, as there is no such title in our vocabulary. We are familiar with broncho-pneumonia and pleuro-pneumonia, but "broncho-bronchitis" must be one of the new discoveries. On looking over these lectures we found them excellent specimens of the work usually done by stenographers who have not the experience or skill to keep accurately the lecturer's own modes of expression, or the education and mental discipline to enable them to grasp fully and clearly the ideas conveyed by them. Consequently the so-called lectures, as they appear in print, present many omissions, many errors, many ideas or points but vaguely or imperfectly expressed, and not a few forms of expression belonging to the reporter, inasmuch as they are never used by the lecturer; all of which might have been avoided if the reporter had submitted his manuscript to the lecturer for his correction and approval, or even if the editor had allowed him a glance at the proof sheets. We hope our editorial brethren will give the two questions we have asked a thoughtful consideration.

EXPLANATION.—Early Sunday morning, February 5, a fire occurred in the two upper stories of the building in which THE JOURNAL printing-office is situated, from which the property belonging to THE JOURNAL received no material damage, although the windows of the room were broken and the room flooded with water, causing the interruption of our work for a day or two, in consequence of which this number appears with four pages of reading matter less than the full complement. We preferred this much shortage to any delay beyond our uniform day of issue.

THE KANSAS STATE MEDICAL SOCIETY will hold its next annual meeting in Representative Hall, Topeka, May 1, 2, 3, 1888. The opening session will commence at 8 o'clock, P.M. Members and their wives will be passed over the railroads for one full fare going and one-third fare returning. A full programme of work has been prepared. Further information can be obtained from the Secretary, J. E. Minney, M.D., Topeka, Kansas.

THE ILLINOIS STATE MEDICAL SOCIETY will hold its next annual meeting in Rock Island, commencing at 10 A.M., May 15, 1888. President, Wm. O. Ensign, Rutland; Secretary, D. W. Graham, Chicago; Assistant Secretary, Geo. L. Eyster, Rock Island.

LONDON MEDICAL RECORD.—The proprietorship of this valuable journal has been changed, and it is to be continued, with its name changed to the "London Medical Recorder."

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, January 11, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. CHARLES K. MILLS read a paper on

THE TREATMENT OF NERVOUS AND MENTAL DISEASE BY SYSTEMATIZED ACTIVE EXERCISES.

(See page 162).

DR. HOWARD A. KELLY said: Some six years ago, while living in Colorado, a friend and myself followed the directions contained in Blakie's book very carefully. My friend was consumptive and has since died. In spite of the condition of his chest he was able in one month to add a full inch to his chest-

capacity. I was practicing at the same time, and succeeded in adding three fourths of an inch to my own. This gain was distinctly in chest-capacity, and due to increased development of the muscles.

I think that Blakie's great merit lies in the extreme simplicity of the exercises directed, many of which consist in simple rhythmical movements of the body. Among his most elaborate apparatus for room exercise is a single bar placed between the jambs of the door. We should, I think, bear in mind that gymnastic exercises are but the substitute in city life for what people get naturally in the country.

A most important point is one to which Dr. Mills has referred, that these exercises should be carried out in a medium of fresh air, and not in the super-heated air of a furnace-heated house.

A word with reference to respiratory gymnastics. When in Rostock with Professor Schatz I had some interesting discussions with him upon the subject of intra-abdominal pressure, and he suggested a series of questions. One was, "In which case is the *intra-abdominal* pressure the greatest, when lifting a bucket of water with one hand, or when lifting two buckets with both hands?" I said that it was greatest when lifting one bucket with one hand, for then we make a column of the *abdominal* muscles on the opposite side, and necessarily increase both abdominal and intra-thoracic pressure; while in the second case, the strain comes upon the muscles of the back, and pressure is not increased. The keynote to the application of this subject to nervous diseases must be this, that deficient innervation is due to deficiency and irregularity. In the circulation, and improvement of the circulation is what is accomplished by gymnastic exercises.

THE PRESIDENT said: I have long been interested in movement cures, and can recall an interesting case which was under my care in 1860, while a resident at Blockley Hospital. A poor wood-sawyer had lost the use of his lower extremities as the result of exposure to cold. Not many months previously Dr. Fayette Taylor, of New York, had explained his method of resistance movements to me, and I determined to try them on the right leg of this man, so once or twice a day I caused the man to try to move his leg against resistance, and moved it myself against his attempts at resistance. Some weeks later when I was showing one of the attending physicians the improvement which had been produced in the right leg, the patient suddenly said, "Doctor that is your leg, now look at mine," and throwing off the cover he kicked his left leg vigorously. Finding the benefit to the right leg so great, he had quietly practiced on the left leg on his own account, and had done much better with it.

DR. BENJAMIN LEE said: It is now about ten years since the lecturer of to-night published a lecture in which the views expressed this evening, and to which we have all listened with so much profit, were somewhat tentatively held. It is gratifying that after this lapse of time he can come forward and substantiate what he then held in a partially theoretical way.

The treatment of nervous affections by gymnastic

exercises naturally divides itself into two branches: the treatment of functional, and that of organic disease. In regard to functional troubles, I have always felt that the nerves on the whole are the best behaved parts of our economy; that all they want is good feeding. When a nerve misbehaves it is because it wants nourishment. Not that the patient may not be putting enough food into his stomach. He may be gorging himself, and yet the nerves may not receive a supply of nourishment which is of the proper quality, and adequate to the demands made upon them. I believe that in the muscular system we possess the great lever to act upon nutrition, and if we make use of the muscular system intelligently, we can, in the majority of instances, supply to the nerves their needed nourishment, and in that way overcome the functional nervous disease.

My own experience with the use of active exercises alone in the treatment of such cases has been limited. I have always combined with it massage and duplicated movements—that is to say, those in which the operator either makes a movement which the patient resists, or resists a movement which the patient attempts to make. The form of exercise in which the operator makes a movement which the patient resists gives us one of the most powerful means of acting upon nutrition. It is what we may term a duplicated excentric movement, or if the term be allowed, an excentric contraction. By a concentric contraction of the muscle we understand that which every muscle makes in an ordinary movement, in which the muscle cell contracting in the direction of the axis of the muscle, the latter is in consequence shortened. By excentric contraction we understand an effort at contraction on the part of the muscle in which the operator uses a greater force than the patient, and the muscle is really elongated instead of being shortened. In this way, the nervous energy of the patient is directed most energetically to the muscle, and yet at the same time, as it is elongated, we are inviting into it an increased supply of blood.

The lecturer has referred to the danger of these exercises being carried to excess. This is particularly true where the exercises are carried on in classes. It is essential in carrying out this treatment in nervous cases that each case should be treated singly on its merits.

When we come to the treatment of organic nervous affections, my experience has been that in the early stage of the disease at least, very little should be done in the way of active exercise. We should rely upon massage and passive exercise. Later, active exercise should be given in the way of carefully regulated duplicated movements. Another important point is with reference to the early use of exercise in all forms of paralysis, and especially in infantile paralysis. I believe that there are hundreds of crippled children and crippled adults going about, who, if their cases had been undertaken in the way described by the lecturer, as soon as the slightest trace of muscular power could be observed, would now be able to walk and have the use of their limbs.

Dr. S. S. COHEN said: Dr. Mills has referred to the use of exercise in the treatment of criminals. I

presume that he means more especially the criminal insane. It may, therefore, not be irrelevant to quote the views of Dr. B. W. Richardson in reference to the prophylaxis of criminal insanity, or if these be too strong words, the rectification of the inherited moral obliquity which, conjoined with ignorance and misery, leads to law-breaking, by teaching those predisposed to a life of crime, to use their muscular and nervous energies in useful pursuits. He would make the prospective forger an engraver, the prospective burglar a blacksmith or a locksmith, and so on. The arguments advanced by Dr. Richardson can be found in a recent number of the *Asclepiad*, and are worth reading. He calls attention to the high importance of this subject by illustrations from the reformatory schools. He states that children who were unruly and could not be kept in order, have been rendered docile and obedient by having their nervous energies liberated in regular gymnastic exercises at such periods as experience has shown that disorder is most likely to occur.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, October 26, 1887.

VICE-PRESIDENT, DR. D. S. LAMB, IN THE CHAIR.

DR. BURNETT presented a

PIECE OF BONE DISCHARGED FROM THE EXTERNAL EAR,

and said: As the question of cerebral abscess following affections of the middle ear comes up for discussion to-night, I have thought it would be interesting to present a specimen and give the history of an interesting case. In November, 1882, Dr. Bussey requested me to see a young woman with an affection of the middle ear and facial paralysis. I found her suffering from inflammation of the ear and facial paralysis of several months standing. On examination I found the auditory canal filled with polypi. The polypi were removed in the presence of Drs. Bussey and Adams. The facial paralysis soon disappeared. The treatment was continued for several months and a number of polypi were removed. Dilute alcohol was used to the granulations. The treatment was discontinued for three or four months when she returned with the ear full of granulations. I did not act so promptly and the symptoms were more difficult to subdue. In about eighteen months I removed a small scale of bone one-half centimetre in length by two millimetres in thickness. She then went to office. She had scarlatina in childhood. In the autumn of 1884, she was attacked more violently than before, the attack lasting two or three weeks. He scraped the middle ear; the temporal bone was exposed and rough, but there was nothing to remove except the granulations which sprang up rapidly. He scraped every week or two but found nothing to remove but the granulations. She became worse through the winter until March when symptoms of pyæmia developed. Dr. Bussey agreed with him in the diag-

nosis. There was neither pain nor redness over the mastoid. They thought there was pus in the mastoid cells and called on Dr. Thompson who drilled but could find none. The disease went on for four or five months without any decided improvement. At times he would shake the bone but found nothing loose. He could not tell the amount of disease in the temporal bone. There were signs of improvement when she determined to try the mind cure. She remained under it during the fall and winter of 1885, and seemed to become very much better, but she kept on syringing the ear. In the spring of 1886 her sister removed the piece of bone presented from the external meatus. The discharge stopped and the morbid process apparently ceased. It is impossible to tell what the specimen is, but he thinks it a part of the semicircular canals. Her intelligence is up to the average.

CEREBELLAR ABSCESS DUE TO DISEASE OF THE EAR.

DR. JOS. H. BRYAN, in opening the discussion said, I think in opening the discussion on an important subject like the one we have for this evening, it will be of greater advantage to the Society to give a synopsis of the advances in the pathology and treatment of abscesses of the brain resulting from middle ear disease, rather than to relate my own limited experience.

I am glad that this Society has had an opportunity of having its attention directed to the evil effects of this too often neglected disease—suppuration of the middle ear. The chronic inflammations nearly always result disastrously, if left to take care of themselves, in either one or more of the three direct sequelæ: meningitis, phlebitis and thrombosis, and abscess of the brain. With these facts standing as prominently before us, why is it we meet with so many of these neglected cases? In the beginning it requires very little attention to check a mild case of otitis media; indeed the inflammation occasionally subsides like magic. Notwithstanding this we occasionally meet with cases which have never received any attention and allowed to become chronic, interfering with the patient's comfort and endangering life.

That secondary diseases of the brain arise from otitis has been known for a long time; according to Schwartz, since the time of Avicenna and Morgagni. It is, however, due to the researches of such men as Toynbee, Sedillot, Virchow, Frolich and Schwartz, of our own time, to establish the different ways by which inflammation can extend, and the different forms of disease that can be developed thereby.

The extension may take place from an acute otitis, but it is generally due to the chronic form of inflammation. At times it is very difficult to discover the path of the inflammation, especially when there is no caries present, or congenital opening between the tympanum and cranial cavity. In this connection the relation of veins and sinuses to the petrous is very important, as is also the fold of the dura mater which extend down into the squamo-petrosal suture of the tegmen tympani. The inflammation may extend to the labyrinth through the fenestra ovalis and

rotunda. Once having reached the labyrinth it can easily extend along the course of the facial and auditory nerves through the porus auditorius internus. Probably the most common path is by direct extension to the membranes, producing a septic leptomeningitis, and thence to the cortex of the brain. The veins which drain the posterior part of the temporo-sphenoidal lobe empty into the superior petrosal sinus, and the septic matter which is absorbed by the sinus can be taken up by these veins and by a so-called retrograde phlebitis carried to the interior of the temporo-sphenoidal lobe, thus giving rise to those cases in which the abscess is separated from the petrous bone by healthy brain tissue.

Cerebellar abscesses generally result by means of caries and localized meningitis, as occurred in Dr. Smith's case.

According to Schwartz, about one-half of all abscesses occurring in the brain are due to inflammation of the middle ear. This is a higher per cent. than that given by Lebert and Myers—which I believe is about one third—but I think as the pathology of the disease is being better understood that Schwartz's figures will be found nearer correct. The abscess may be found in either the sphenic-temporal lobe, or is sub-dural in the cerebellum. The sub-dural is probably the most frequent, and the cerebellar the least so.

Toynbee believed that the localization of the abscess depended upon the part of the bone affected; but this does not always follow, as has already been stated, the seat of the abscess may be some distance from the bone, and separated from it by healthy brain tissue.

From numerous observations made in the post-mortem room, Mr. Barker, of London, is led to locate the abscess either over the roof of the tympanum, close to the squamo-petrosal suture, or on the posterior surface of the petrous bone; and in some cases it extends from one to the other of these spots. Hence, he concludes that the abscess is usually found in the middle, or posterior part of the temporo-sphenoidal lobe, and that nine-tenths of them will be found to lie within a circle with a radius of three-fourths of an inch, whose center lies one inch and one quarter above and at the same distance behind the center of the auditory meatus.

When the cerebellum is the seat of the abscess it is usually found in the anterior and outer part of the lobe, just back of the posterior surface of the petrous bone.

Although experimental physiology is rapidly locating the cerebral centers. I think they are not so firmly established that we can rely upon their disturbance in all cases to the exclusion of the general subjective symptoms, but they are of very great value when taken in conjunction with the general signs. Owing to the inconstancy of the subjective symptoms we frequently find it very difficult to make a diagnosis, and much more so to locate the abscess. It is not an uncommon occurrence for the abscess to remain latent for a long while, to break out only upon the receipt of a blow on the head, a fall, or after some undue mental strain. During the latent period there may have been no symptoms pointing to the

brain lesion. What are we to rely upon to make our diagnosis? It is only by carefully considering all the symptoms, both general and special, that we can hope to come to any definite conclusion. Headache is not of much value as a symptom of localization, for it frequently happens that the abscess is in an entirely different part of the brain than that indicated by the pain. Diplopia and optic neuritis, when present, are of value—for the latter symptom is frequently wanting. The temperature, which runs up to 102° and 103° , accompanied by rigors, to fall later on to subnormal, is a valuable sign. The pulse is generally slow. Mr. Barker calls special attention to this subnormal temperature, which was much lower in the evening in his cases. The above-mentioned symptoms, together with the frequent nausea and vomiting, and what special signs there may be present, especially following in the wake of a chronic suppuration of the middle ear, we can in most cases come to a definite conclusion. When the abscess is associated with meningitis, or phlebitis and thrombosis it is impossible to make a diagnosis.

The prognosis of abscess of the brain is far more favorable than it was formerly, and we have something more to do now than simply to make our diagnosis and wait for the autopsy to confirm it. Through the labors of M. Lucas-Championnière and Mr. Victor Horsley, the skull has been mapped out and such definite directions given that we can enter the cranial cavity and open an abscess of the brain with almost as much safety as one occurring in other portions of the body. Before treating the abscess let us direct our attention to its cause.

It is an unfair reflection to cast upon otology to say that the advances made in the treatment of abscess of the brain has been greater than those for the treatment of its cause—chronic suppuration of the middle ear. We are to-day able to cure a great many of those chronic cases which a few years ago were pronounced hopeless. When the inflammation does not subside under mild treatment, then radical cure or Schwartz's operation should be done, and the parts can thus be kept perfectly drained so that the possibility of sepsis is greatly diminished. If the disease has advanced and the abscess formed, then the skull must be opened, at the same time keeping up the drainage from the ear.

The great questions to be decided in operating for abscess of the brain are when and where to apply the trephine. The first is answered by applying the trephine as soon as we feel convinced that there is an abscess, and not to wait until the vital forces become exhausted and the patient is in a comatose condition. Knowing that nine-tenths of the abscesses are to be found in what is called the "dangerous area," we would naturally apply our trephine somewhere in the circle described by Mr. Barker, if we decide the case to be a cerebral or subdural abscess. If it is situated in the cerebellum the rule is to draw a line from the post-occipital protuberance to the tip of the mastoid process and apply the trephine at the middle of this line. By this means there is no danger of entering the lateral sinus. Horsley insists that the old crucial incision should be abandoned

for the flap operation. Great stress is laid upon the fact that the flap must be so outlined as to preserve in its attachment either the superficial, temporal or occipital arteries. As regards the reflection, it has been customary to reflect the periosteum as a separate layer; but this has an obvious disadvantage in that the membrane is easily torn and lacerated. This is obviated by reflecting it in continuity with the rest of the flap.

The incision for the flap in cerebellar operations should be a curved one, commencing at the post-occipital protuberance running downwards and terminating at the apex of the mastoid process. If it had been possible to locate the abscess in Dr. Smith's case, I think it would have been a favorable one for operation. It would be interesting to know the damage to the petrous bone. It seems almost impossible that so much destruction of the interior of the bone could take place with no other symptoms resulting than those given in the record of the case.

DR. BURNETT: This is a very interesting question, and it only needs somebody to start the subject, so he would offer a few thoughts. The main question is respecting the treatment; and, with due deference to general surgery, there has not been much advance made in treating the complications of inflammations of the ear. They should be treated early. The general practitioner orders the usual treatment for otitis and the discharge ceases. The ear is washed out, but the disease is going on all the time. The mucous membrane is thickened and inflamed. There is loss of nutrition and disease of the bone. The healing power is lost. Patients must be treated early and watched for months afterwards. There is a return upon the slightest exposure, showing that the disease was not cured. The physician does not always see these cases. His case has taught him a lesson in bone surgery, so that if there is necrosis in that locality he will let it alone. The operation for mastoid abscess is more frequently performed than formerly. At the last meeting of the Otological Society there was an unusual number of specimens presented. The journals are giving numerous deaths. If you empty the cerebral abscess do you cure the meningitis?

DR. REYBURN: The last three cases I had were in the same family, and two died. A girl, 17 years old, had scarlatina which was complicated with meningitis; there were evidences of pus within the cranium and he wanted to operate, but the family would not allow it and the patient died. The next year a boy of 20 was similarly affected. He was about to operate when the patient was taken with convulsions and died. The third death was from the use of a nasal douche which caused inflammation of the middle ear and meningitis, and the patient died. We should impress parents with the gravity of diseases of the ear and the importance of early treatment. They usually consider that these diseases are natural accompaniments of teething, and that they will get well of their own accord. He has found boric acid to excel all other remedies. It will cure when the inflammation does not extend too far.

DR. HERMANN: Although it had not been his

good or bad fortune to have to make a post-mortem examination in a case of his own, he has had occasion to see quite a number of them during his hospital practice. He has seen many cases of purulent otitis media cured by timely treatment. When neglected cases come into our hands and we find the bone denuded, we might at first try Wilde's incision, which sometimes is sufficient; but, as a rule, the original seat of the trouble being located in the mastoid cells, the opening of the mastoid bone either by chisel or trepan is indicated. The longer we hesitate the more chance there is for the development of a cerebral or cerebellar abscess. Cases of this kind usually follow in the wake of measles, scarlatina or diphtheria. He has had occasion to observe, in post-mortem examinations of children dying of a complication of scarlet fever with diphtheria, that the tympanic cavity is filled with a kind of pseudo-membrane or exudation. This diphtheritic affection of the middle ear is not always diagnosticated and the patients, in some cases, gradually recover apparently without there being any attention, perhaps, to the very slight symptoms indicating trouble in the middle ear. If they have a good constitution they may get entirely well; but if the scarlatina or measles is followed by a long convalescence and general debility, then the ear trouble is sure to show itself. The residuum of the exudation in the middle ear is not resorbed readily, and forms a nucleus of inflammation which results in perforation of the drum and consequent purulent discharge. If this discharge is fetid it is significant of affection of the bone. Frequently, when the bone is laid bare, it can be seen or felt quite easily after the ear has been thoroughly washed out—of course with a disinfecting fluid. But if the caries is located in the mastoid cells—and this is frequently the case—we have to rely on other data for our diagnosis. Feter, constant headaches, pain on tapping the mastoid bone, fever and a number of other symptoms will soon enable us to make our diagnosis certain. By performing Schwartz's operation on the processus mastoidous, by which he has saved many lives, we establish a free communication with the parts affected, and allow the pus accumulated in those cells to escape instead of letting it work its way towards the brain. If we should not find any accumulation of pus, but little harm is done by the operation. If the bone is affected we should always operate and give the patient a chance.

DR. BURNETT was misunderstood about the operation which he meant to be applied to abscess of the brain. Many men are opposed to operative interference and perforation of bone; and others cure without operation. He believes in cutting into the mastoid, and in his case he went into a healthy mastoid.

DR. REYBURN: There is but little danger in trephining, and he has never seen a death from the operation; they die, but not from the trephining. He saw two of the cases operated on by Victor Horsley. When he reached the dura mater there was nothing unusual to be seen, so he cut into the brain and found the tumor imbedded in its substance. The operation was performed for epilepsy, and he saw

the man walking about the ward, and learned that there had not been a return of the attacks.

DR. J. FORD THOMPSON has had considerable to do with brain and ear surgery. Trephining in itself is simple enough; the questions are where to trephine, the diagnosis and the prognosis. Years ago the practice was very common as a means of searching, but the results were unfavorable. He hesitates, not to trephine, but to locate the abscess. Some time ago Dr. Busey and himself saw a case with Dr. Prentiss. A man 40 years old had earache which was followed by symptoms of pyemia. He died, and the post-mortem revealed an abscess of the petrous bone which had ruptured into the lateral sinus. In Dr. Burnett's case he opened the mastoid cells, but did not find pus. No surgeon would think of taking out the walls of the auditory canal. Trephining will open the abscess and prevent its extension in the opposite direction. Dr. Smith only saw his case just before death, and it would have required nice diagnosticating to have made out the condition. An operation would not have benefited him, nor would statistics encourage such an operation. He will open an abscess anywhere he finds it. Wonderful operations are being performed within the skull. Dr. Weir recently removed a tumor from the cerebellum, but the patient died. Durante diagnosticated a tumor in the cerebrum over the orbital plate. He opened the side of the skull, elevated the frontal lobe and removed a tumor the size of an egg, and the patient recovered. If there is a guide to the seat, as pain, paralysis, aphasia and facial paralysis, we can apply the trephine near enough. When the disease is in the interior of the brain substance we have no such guides. The practice of cranial surgery is attended with frightful mortality. He recently saw a case which had received a blow months before; he soon lost interest in his business, and very soon coma came on. He diagnosticated abscess of the brain, and the post-mortem confirmed it. This was a case for operation if the diagnosis had been made earlier.

DR. GODDING had some instructive statements of autopsies of the insane which were wide of their mark. In children it is for the general practitioner to diagnosticate these affections: they only come to him with the sequelæ; that is, inflammation of the brain following scarlatina. They are not cases of abscess of the brain going to a fatal termination. Dr. Blackburn has informed him that he has not seen a case of abscess of the brain. We have seen tumors which he could not recall. In one case the tympanum was perforated when the man was comatose, but pus was not found; he died either from abscess or meningitis, which could not be verified, as a post-mortem was not allowed. A case of chronic mania of sixty years' duration, in which there were delusions and fantasies, but no paralysis nor sexual disordered function, was found dead. A soft tumor was found in the cerebellum. He had gone about without any of the usual evidences of such pathological conditions. In 1,300 deaths the absence of abscess of the brain would indicate its comparative rarity.

DR. SMITH: To differentiate intercranial abscess

from disease of the internal ear is usually very difficult. There may be a discharge from the ear, the pus and detritus passing one way and the inflammation the other. He has had three cases die from ear trouble. In one with disease of the middle ear the patient died comatose. In the next there was a discharge from the middle ear and extensive cellulitis of the neck. He opened the mastoid, but the patient died. In the last there was an abscess of the brain from ear disease. In another case the physician had told the family that the patient had pneumonia. The man died and the family were incensed at the first doctor. The autopsy revealed an abscess of the brain and also pneumonia. Dr. Prentiss reported a case in this Society. The discharge from the ear had ceased. Dr. Thompson aspirated the liver, but did not find pus.

Dr. Busby desired to correct some misstatements in regard to the case reported by Dr. Prentiss. There was no dispute in regard to the existence of an abscess, but its location was not definitely determined. The man had had one or two very severe rigors daily, attended with a fever varying from 105° to 106° , and a constant pain with acute exacerbations in the region of the lower lobe of the right lung. There was a history of ear trouble, but at the time there was no symptom which directed attention to it. There was neither a discharge from the ear, nor any swelling or tenderness about it, nor any brain symptoms. The constant and violent pains at the base of the right lung, together with marked circumscribed dullness extending above the liver surface, suggested a possible abscess of the liver pressing upwards into the thoracic cavity. For this Dr. Thompson aspirated, but failed to find any pus in the liver. The autopsy revealed an abscess in the brain, and a condition of the lower lobe of the right lung which was believed to have been caused by numerous emboli. It is not impossible that a similar condition of the lung was present in the lung of the patient referred to by Dr. Smith, and that the physician who made a diagnosis of pneumonia may not have been far away from the fact.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, November 18, 1887.

THE PRESIDENT, HENRY T. BYFORD, M.D., IN THE CHAIR.

THE PRESIDENT presented a

FIBRO-SARCOMA OF THE UTERUS AND BROAD LIGAMENT.

This specimen of the fibro-sarcoma of the uterus is interesting, as having been obtained by one of the most difficult hysterectomies on record. I have the following notes of the case:

Mrs. E. W., American, aged 40, widow; had been married twenty-two years, having borne four children, the oldest twenty years of age, the youngest twelve years old. Four times since the birth of her

last child she had miscarried at the third month. Her present illness began six years ago, when she discovered an enlargement in the left inguinal region. There was no pain connected with it, but the last miscarriage, three years ago, was extremely painful. After recovery the pain in the left side subsided. One year ago the growth began to increase in size, and has grown very rapidly since. There was dull, heavy pain through the pelvis. Two months previous to this time an exploratory incision was made and a diagnosis given of fibroma of the uterus, with numerous pelvic adhesions. The surgeon did not think its removal practicable. On August 4th I removed the tumor. The operation was begun at 3:15 P. M. and completed at 7:15 P. M. The tumor, including the uterus, was about the size of a man's head. I found the whole anterior surface of the omentum firmly adherent to the abdominal wall above, and the tumor beneath, making it almost impossible to get at the tumor, and certainly quite impossible then to make an ordinary exploratory incision. It required about three quarters of an hour to get the omentum, whose veins were as large as goose-quills, ligated so that I could free it from the surface of the tumor. After enlarging the incision, I found a little space on the right where there were no adhesions. All over the left side the small intestines were adherent, lying flat on the surface, while above and on both sides the colon, throughout its whole length, lay as if plastered upon the tumor. Large blood-vessels could be seen running from the bowel on to the tumor. If I could have lifted the tumor sufficiently to put an elastic ligature about the uterus I might have quickly enucleated it, but I could not stir it from its bed. It was a sarcoma that did not easily admit of enucleation, and bled profusely from the slightest wound. The patient was anemic, had already lost some blood, and had been under ether for some time. But I had to go on, for I did not dare to close the incision with the already disintegrated surfaces free in the abdominal cavity. So by ligating dozens of places, cutting between some ligatures and enucleating under others, I finally got the tumor so that I could raise it a very little. Over two hours were thus consumed before I succeeded in freeing it above and tying the ovarian vessels of the left side. I then rapidly enucleated far enough down to apply an elastic ligature, using all of my hemostatic forceps in stopping bleeding points. But the uterus had grown into the broad ligament and was firmly attached to the pelvis, so it could not be enucleated out of its vascular surroundings, but had to be ligatured at and against the pelvic brim on the left. The pedicle, as you see, was about the size of a man's thigh, and is traversed on one side by the enlarged uterine cavity. It was treated by Hegar's extra-peritoneal method. The patient died forty-three hours after the operation of exhaustion. The greater extent and vascularity of the adhesions, as compared with fibroma, were well illustrated here. The absence of menorrhagia in the history of the case corresponds with what is more often noticed in sarcoma.

DR. ETHERIDGE.—Will you tell us how you freed the colon from the tumor, and whether the bladder was implicated?

THE PRESIDENT.—The bladder was not implicated. In freeing the colon I took stitches through the capsule of the tumor and ligated separately the large vessels on the other side and cut between them. In some cases I used hemostatic forceps on the tumor side, in others I enucleated.

DR. J. SUDAM KNOX read the following report of

THREE PELVIC PRESENTATIONS, WITH DEEP LACERATION OF THE PERINEUM.

The three cases of breech delivery here reported occurred in close sequence in my private practice. Being unusually severe labors, and having certain points in common, they impressed me as being worthy of report. Taken collectively, they suggest discussion as to the management of labors with this presentation.

Case 1.—Mrs. W., American, æt. 26, primipara, was taken with slight labor pains 4 A. M., May 7th, 1887. At 2 A. M., May 8th, Dr. Colton was called and found the breech presenting, S. L. A. As the os was but partially dilated, and the pains extremely irritating, he administered opium and chloral. Rest, with gradual dilation of the os was thus obtained for the next twenty-four hours, when I first saw the case. Finding the membranes unruptured, and the os still not sufficiently dilated, the breech not being engaged. I advised non-interference and a continuance of the opium per rectum.

At the end of twenty-four hours I was again sent for. Water had been escaping for hours, the breech rested on the perineum, the patient was exhausted by seventy hours' labor, and the fetal heart could not be heard. The doctor had made long and faithful efforts to assist the delivery, but the body was apparently impacted in the pelvis and would not advance. With great difficulty I succeeded in bringing down a foot, and at length delivered a lifeless twelve-pound boy.

The after-coming head caught in the superior strait and its extraction with forceps caused a laceration of the perineum to the right side of, and beyond, the anal sphincter. The soft parts were so swollen and contused that immediate stitching was deemed inadvisable.

The perineum was partially repaired by granulation during a tedious convalescence of five weeks. Secondary operation will be required.

Case 2.—Mrs. M., a stout young Bohemian, æt. 22, fell in labor with her first child the morning of May 13th, 1887. Dr. Michelet in charge. The first stage of labor was tedious and extremely painful. The membranes ruptured at the end of twenty hours. For three succeeding hours pains were severe and expulsive, when the patient became exhausted and labor ceased. Dr. Nelson was called in and advised stimulants, quinine and opium. The patient slept several hours, awoke refreshed, and the pains returned with strength and regularity. Thirty-nine hours from the commencement of the labor Dr. Nelson was again called in and I was re-

quested to meet him. We found the breech resting on the perineum, the body firmly impacted in the pelvis, and the child dead. Persistent efforts at extraction had been made, leaving the vulva bruised and swollen and the perineum rigid. The patient having been put under ether at the request of the others, I engaged a blunt hook in the anterior groin of the fetus and gradually succeeded in extracting the body. The forceps were then applied to the after-coming head. Its delivery caused a laceration of the perineum through the sphincter, and about one inch up the recto-vaginal septum. The weight of the child was ten pounds.

Under the most disadvantageous circumstances Dr. Nelson successfully closed the rent, using three silver sutures in the septum and four in the perineum.

Antiseptic post-partum treatment was adopted, but the patient had septic fever. On the eighth day feces escaped per vaginam. Examination revealed no union, and the stitches were removed. The patient was four weeks in bed. For two months she was confined to the house. She has but little control of the rectum to-day.

Case 3.—Mrs. T., a robust American woman, æt. 36, was confined four years ago, in New York, with her first child. After several hours of distressing labor a dead and mutilated child was instrumentally extracted. I could not learn whether craniotomy was practised or not. On the morning of June 24, 1887, I was called to attend her in her second labor. I found the vertex presenting high up L. O. A. The first stage of labor lasted thirty-six hours, when the os being fully dilated, I ruptured the membranes. Hard expulsive pains succeeded for three hours, when, finding the head did not engage, I attempted the high application of the forceps.

The blades were introduced and locked without difficulty, but each attempt at traction caused them to slip backwards over the crown of the child. Owing to the great obliquity of the head, this always occurred in spite of extreme depression of the handles and downward traction. Anesthesia was then produced, the hand introduced, and podalic version easily accomplished.

The after coming head became impacted in superior strait, requiring the forceps. Fifteen or twenty minutes passed before it could be disengaged and delivered. By depressing the handles of the forceps between pains I succeeded in getting some air to the child, and thus finally delivered it alive. Weight of child, twelve pounds.

My best efforts could not save the perineum, which was torn through the anus and one inch up the recto-vaginal septum. After the delivery of the placenta, I repaired the laceration with two deep silver sutures. The upper stitch was inserted on a level with the lower vaginal commissure and passed entirely around the recto-vaginal rent. The second stitch closed the perineum above the sphincter ani. The rectal sphincter not having been repaired, the condition of the patient was similar to that after operation for anal fistula. The stitches were removed on eighth day, finding the perineum healed. The patient was up and about in two weeks, appar-

ently as well as ever. October 13th, the rectal tear not fully healed, but sphincter under full control. My impression is that no further operation will be required.

In reviewing these cases I was impressed with the danger to the fetus in delay of delivery after the membranes have ruptured. Until then, breech presentations should not be interfered with, for the dilation of the os is slowly accomplished, and the membranes should be kept intact as long as possible. This long first stage, however, is apt to exhaust the patient and make her irritable. We thus get spasmodic rigidity of the os tincæ and perineum.

After the rupture of the membranes, and the protrusion of the breech into the vaginal canal, the rigid perineum is apt to cause the flexible body and folded limbs to pack in the pelvis, and delivery is retarded. If this retardation continues, tonic uterine contractions are induced, and the child dies asphyxiated, or uterine inertia comes on and the fetus slowly dies from compression. In the cases reported, the large size of the children, and the easy delivery of the after-coming heads, show that impaction was not due to disproportion between the pelvis and the fetus.

These successive complications I believe are present in some degree in all breech presentations in primiparæ. The novelty of the situation, with its pain and anxious forebodings, tends to make such parturients nervous and irritable. Under ordinary conditions, breech presentations should be severely let alone until the breech has cleared the vulva. The bag of waters can scarcely be left too long unbroken; the folded body best prepares the way for the after-coming head, and, therefore, the extremities should not be brought down. Traction leads to extension of the chin and the passing of the arms above the head, and, therefore, ordinarily are unwise and vicious.

In cases, however, like the first two reported, there must be a departure from the ordinary methods, to avoid the ill results that followed.

In a prolonged first stage, the resulting irritability of nerve and muscle can largely be avoided by a free use of opium guarded by belladonna. Rest is thus secured; strength conserved; the os tincæ becomes relaxed, and the perineum distensible.

After the rupture of the membranes, the descent of the breech should be encouraged by pressure upon the fundus uteri during each pain. At the same time, two fingers in the vagina depressing the perineum would prevent impaction and increase the energy of the uterine contractions. Should impaction threaten, anesthesia should be induced, the feet brought down and tractions made; always, however, following the descending fetus with compression of the fundus uteri. This outline of treatment is, of course, to be modified by the idiosyncracies of the patient or peculiarities of the case.

Each of the three patients reported was deeply lacerated. Each laceration was treated differently.

Case 1 was not operated upon. The soft parts were so edematous and bruised as to forbid expectation of union. I believe this to have been an error

of judgment. The edema soon subsided, there was no sloughing, and partial repair at least with much comfort would have followed the closing of the wound. The mere apposition of the parts without union is a great advantage to the patient, as illustrated in Case 2.

The latter was far less distressed during the first week of her lying-in, though her laceration was much more grave and no union resulted.

In Cases 2 and 3, both lacerations passed through the sphincter ani, and about an inch up the recto-vaginal septum. In Case 2, the whole wound was carefully closed with seven silver sutures. Non-union resulted. Septic fever was, however, present. In Case 3, but two sutures were used, one closing the vaginal rent and the other the perineum. The deep anal fissure was left untouched. Good union followed.

I believe these opposite results had their origin in the management of the torn sphincter ani. In such deep lacerations this muscle is a born disunionist, and chafes under the restraint of a stitch. It should be excluded in the closing operation. The end sought is to restore the integrity of the perineum. Even the rent in the recto-vaginal septum, unless extensive, is of less importance.

DR. D. T. NELSON: Perhaps it would be more appropriate for me to say something later in the discussion, but as I was cognizant of the first part of the history of the case, it may be interesting to state the condition of the patient before Dr. Knox saw her and kindly assisted, for I assure you we wanted not only his brains but his muscles. The attending physician and myself had become completely exhausted in attempting to dilate the perineum and cervix and make ready for some one to deliver. I believe I never saw a more rigid perineum; the cervix had dilated fairly well, but slowly and tediously, assisted I believe, by opiates—chloral had been given by the attending physician before I saw her. In theory and practice I have no doubt of the importance of aiding dilatation of the perineum when it does not dilate satisfactorily. This was one of those cases, rarely found, in which it was exceedingly difficult, almost impossible, to dilate. Considerable had been accomplished before Dr. Knox saw the patient, and yet I am sure he would be ready to testify that the perineum was not well dilated, and more, that it was not dilatable. It was ruptured before it was dilated. As to the wedging of the fetus into the pelvis or into the lower strait, it was to me an interesting fact, and I think I have seen it several times before. It ordinarily means the death of the fetus. Thus wedged in, when dead, the fetus is, so to speak, a ball of putty which can be crowded by the forces above into a mass against the resisting medium, whatever it may be. Pains had been increased by the manipulations in dilating the perineum, and I think that is an important advantage in many cases of difficult labor, that by attempting to dilate the perineum the pains will be strengthened, just as they are ordinarily in a normal condition of things when the head, or whatever the presenting part is, reaches the perineum. You have the advantage of the reflex

muscular contraction which makes the pains very much more powerful. But we had become exhausted in attempts at dilatation before Dr. Knox saw the patient, so we got very little advantage in that way. What advantages have we gained by the experience? It seems to me the proper place for improvement in treatment of such a case is during pregnancy or before pregnancy even, and the question is whether or not we could do anything to make the muscular structure better in quality. It seemed to me one of those cases in which there was, to a large extent, absence of the development of muscular structures in the vagina and perineum which ordinarily follows pregnancy. We are all aware that pregnancy makes a great change in the vagina, vulva, uterus and ovaries, and it seemed to me that change had not taken place as it should. There had not been the development of the muscular structures that would facilitate the delivery. She was much in the condition, when I first saw her, of a virgin. She was quite fleshy, and I think it is the experience of all of us that these are the patients whose perineums and other structures rupture; they do not dilate as well, perhaps from absence of muscular tissue, perhaps from the presence of fat. As to the restoration of the perineum, I remember well that we discussed the question whether it would be wise to attempt the immediate operation of the restoration of the perineum and other ruptured parts after delivery; my own thought, and I think it was the unanimous belief of those present, was that the woman would be no worse off if the immediate operation was performed, and probably would run less risk of sepsis, though we all doubted the satisfactory union of the parts. I heartily agree with Dr. Knox that, as a general rule, it is not wise for us to try to close the perineum and be thoughtless about the recto-vaginal septum and the sphincter ani. I should decidedly prefer, if I was to operate after another physician, to have the septum closed, and to have the opportunity of closing the sphincter and perineum. I think the first operation should be the closure of the septum. I think it will be found quite difficult to close the recto-vaginal septum, after the perineum and sphincter have been restored. I fully believe that the danger of sepsis and other serious complications are lessened by the immediate operation, even though the parts are so lacerated that we can hardly expect a satisfactory union, and I would do the primary operation unless the patient was so exhausted by the previous delivery as to forbid it.

DR. CHAS. WARRINGTON EARLE: Such difficult breech cases as your attention has been called to this evening are not frequent in my practice. Indeed, when I have seen pelvic presentations terminated before I could reach the case, safely to both mother and child, it has sometimes occurred to me that we exaggerated the dangers of these cases, and I have thought that the ordinary breech case gets along better without some doctors than with them. I think there is no doubt but that the temptation to extract quickly sometimes produces the complications we seek to avoid. The cases presented by Dr. Knox were indeed complicated, and, with his most able

advisers, I believe the most judicious treatment was pursued, but I cannot see why episiotomy was not performed. This is an operation which, in my judgment, should not be done frequently or unadvisedly, but it occurs to me that here it would have been justifiable.

Dr. Nelson compares the condition of the child in the cavity of the pelvis to a mass of putty.

With such a condition of things as this—the child dead and the lower parts rigid—why waste time trying to deliver with forceps or anything else; why not perforate at once, reduce the size, and then deliver?

In regard to lacerations, I am an advocate of closing them all. I have never performed the immediate operation on the cervix, but I have witnessed it, and, if performed by a skillful operator, I think it justifiable. Certainly, it is our duty to do the immediate operation if the perineum is ruptured. I once saw Carl Braun's assistant do a craniotomy, in the course of which the cervix, a portion of the vagina, and the perineum were all torn. After the usual antiseptic precautions to the cavity of the uterus, he introduced retractors, and successively closed the rent in the cervix, then in the vagina, and then the perineum, using in all about sixty sutures.

I can easily see how in a small room, and with imperfect facilities, it would be impossible to do such an operation, yet the indications are, to thoroughly and antiseptically and immediately close these lacerations.

DR. D. T. NELSON: I would like to say a few words in reference to some of the points raised which Dr. Knox did not know. As to the use of hot vaginal douches, the hot sitz-bath was not used; it was practically impossible, on account of the absence of conveniences. A hot-water vaginal douche was directed and repeatedly used during the first stage of labor. A word further with regard to the septic conditions: I believe the woman had septic fever, but I believe that antiseptic precautions were fairly used, not as they might be in a hospital, or as they would be in our best private practice. Vaginal douches of an antiseptic type were repeatedly used during the first stage of labor, and after delivery iodiform was constantly thrown into the vagina and over the vulva. As to closure of the perineum by primary operation, and putting in too many stitches, I have had some experience in that direction, and fully believe that putting in a large number of stitches, and closing the parts perfectly, is a desirable thing to do, and I have repeatedly had it succeed most admirably. I never had as bad a result as this one, and the reason is partly explained by the fact that we were working at a decided disadvantage. We did not think it safe to put the patient on the table, where we could have had an opportunity to perform the operation satisfactorily. More than half the stitches were put in by feeling, and not by the eye, and you can judge that they would not be well put in, and accurate coaptation could not be secured. The expectation was not that there would be complete union, but that there would be less sepsis than otherwise, and I think the woman would have had far less chance of life if the operation had not been attempted.

As to turning and delivering the child by its feet, I think any gentleman would have found it a difficult task to turn that babe and deliver it. As to dilating the parts before the instruments are put on, it seems easy, and in every other case of breech presentation I ever saw it was exceedingly easy to deliver the patient, but this was so extremely difficult I was very glad to have Dr. Knox present to assist, as well by his fingers as his valuable head. If I should ever meet another such case, I would be glad to have some gentleman of the Society present, and if he can deliver with his fingers, they will be stronger than any that were present on this occasion; I feel sure there are no fingers in this Society that could have delivered that breech.

THE PRESIDENT: I would like to take exception to one of the main conclusions of the paper, that it is not well to try to do too much in closing the perineum. In those cases in which I have put in the most stitches, the union has been the most complete. I recently put in twelve stitches and got complete union, in a laceration extending into, but not through, the sphincter ani. In another extending through the sphincter ani, I obtained complete union by using fifteen stitches. I preserved a piece of the perineal centre, which was hanging out like the end of a finger, by stitching it back with buried juniper catgut. The reasons for failure are that the operation is poorly done, or imperfectly cared for afterwards. If the operator uses carbolized catgut, he will be sure to have occasional failures. I use buried sutures of juniper catgut in the recto-vaginal septum, instead of rectal sutures, and then stitch the vaginal edges, exactly as they belong, with the same material. The lowest external stitch should be taken low down and through the ends of the torn sphincter, as recommended by Emmet. Either this or the next one should pass deep enough into the perineal body and near enough to the rectal mucous membrane to sustain the rectal pressure or traction as far as possible. If these stitches be of silk-worm gut or silver, they will not give way, when properly and aseptically taken. I think the mistake is sometimes made of cutting off too many irregularities, instead of fitting them together. After the parts are united, we should, if the rectum has been lacerated, bind up the bowels for several days, and at first use plain vaginal douches, not carbolized ones, from three to five times in twenty-four hours. Beginning with the third and fourth day, carbolized douches should be employed. If we take all this care, the same as for the secondary operation, we will, unless the parts have been too badly bruised, have the same success.

DR. J. S. KNOX: In regard to the infection of these patients, Dr. Cotton told me his patient had no septic fever or rise of temperature, and he thought convalescence was delayed on account of the laceration of the parts. Dr. Michelet's patient had septic fever. The stitches were removed on the eighth day, and union was found not to have taken place. In my own case, the woman made a prompt recovery. I kept her in bed two weeks, because I had stitched the perineum; there was no rise of temperature, no signs of sepsis; she had a normal lying-in. I intro-

duced my hand into the uterus and turned the child. I used no intra-uterine douche, but used an antiseptic vaginal douche, two or three times a day. In reply to Dr. Earle, the physicians were not trying to save the perineum, as the lacerations were not at all expected. I have repeatedly applied the forceps to the after-coming head in breech presentations, and always expect to deliver the head without laceration of the perineum. It has been my experience that when a delivery of the after-coming head is attempted instrumentally, it comes suddenly and unexpectedly; you make strong traction, and the head flies upon the perineum and out in the world in a moment, and I think the lacerations of the perineum occurred in this sudden popping out, so to speak, of the after-coming head. Dr. Byford speaks of keeping the bowels bound up after operations of the perineum. I met with greatest success in keeping the bowels open; my inflexible rule is, after stitching the perineum, to administer to my patients, from the start, Friedrichshall or Hunyadi water. I like them to have a stool once in twenty-four hours without the use of an enema; I also like my patients to pass urine naturally, and then, as soon as the patient has urinated, to douche out the vagina and the wound. I think it is not judicious to keep the bowels constipated. In regard to Dr. Nelson's criticism of my conclusion about too much being attempted, I spoke only of this one case. I believe that all lacerations should be closed, if possible, and that every care should be taken to perform an immediate and complete operation. When, however, the conditions are such that one cannot make a complete operation, I should much prefer to close the perineum, leaving the sphincter ani muscle unclosed, to even leave the septum not stitched, rather than the perineum, because I believe that the results of a laceration of the perineum, unrepaired at the time, and left for a secondary operation, are quite serious. There seems to be a readjustment of all the organs of the pelvis; the position of the bladder, rectum, and uterus are not the same as before, and the longer the secondary operation is delayed the greater are the displacements. In this operation, I said, too much was attempted, because an appropriate and satisfactory operation could not be done under the circumstances.

All the surroundings were such that all operations were done with a great deal of difficulty; in fact, Dr. Nelson made half his stitches by touch, and not by sight. In my own case I was alone with no assistant but an ignorant Irish nurse and with a hysterical patient. In the case operated upon by Dr. Nelson, I think, if he had used less skill, he would have had a good perineum. Speaking from my personal experience, I think that manual dilation of the os in labor is injurious; I believe most thoroughly in the septic inoculation of the uterus by attempts to dilate the os in labor, even before the membranes are ruptured. When the os has become rigid, I occasionally introduce two fingers and try to retain what dilation has been accomplished by pains; but the dilation of the os, I think, is a vicious practice in ninety-nine cases out of a hundred, but by dilating the perineum when it is rigid I

have saved a rupture, in breech as well as vertex presentations. If impaction of the fetus and laceration are accomplished largely by rigid perineums, I think it is proper for the physician to do this operation, and I know that it does bring on more regular pains.

DR. EARLE asked if these women were subjected to a long hot-sitz bath as a means of assisting dilatation?

DR. KNON.—They were not. There are many things that have suggested themselves to me in connection with these cases. I believe that if hot vaginal douches, hot sitz-baths, and hot applications over the abdomen had been used, they would have been more satisfactory.

(To be concluded.)

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, December 8, 1887.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

(Continued from page 150.)

DR. BARTON C. HURST reported a case of

CHOREA IN A PREGNANT WOMAN.

It is not often that one has an opportunity to study chorea in the pregnant woman, and consequently each additional case that is reported must excite some interest. But aside from its rarity, the extraordinary mortality that attends this disease of pregnancy, as well as the constant disposition to abortion, lends additional interest to the study. Barnes, Jacoud, Wenzel, Bamberg, Speigelberg and Hervé found respectively, in 56, 31, 66, 64, 69 and 14 cases a mortality, respectively, of 30, 12, 27, 28, 28 and 21 per cent. (Hervé: Thèse "De la Chorée pendant la Grossesse," Paris, Thèses de l'école de Médecine, 1883, 1884), while in more than half of all these cases the product of conception was expelled at varying periods before term. Without, however, entering into an extended consideration of the frequency, mortality, causes or treatment of chorea gravidarum, it is simply my intention to report to the Society a case which has recently come under my observation in the Maternity Hospital, the history of which may be briefly given as follows: Lizzie H., prima gravida, æt. 19, was admitted to the hospital last August, being then in the sixth month of pregnancy. There was, she said, no tendency to nervous disease in any member of her family, and she had herself been healthy until her ninth year, when she was seized with violent choreic movements of the left arm and leg. This attack lasted about a year, when it yielded to treatment; but the disease reappeared in her twelfth year. She was then sent to England, her family's home, in the hope that the change of climate and the sea voyage might benefit her; this it did greatly, and she was free from chorea until her return to this country in her fourteenth year, when the disease again appeared; this attack,

however, lasting only fifteen weeks. Menstruation was established at the sixteenth year and, after recurring for a few periods, suddenly ceased and remained suppressed for five months, during the whole of which time the choreic movements, confined, as they had always been, to the left arm and leg, were so violent that the girl dared not go out of the house alone. With the reappearance of menstruation the movements suddenly ceased, and the patient remained free from the disease until the occurrence of the first fruitful coition, which was followed almost immediately by the reappearance of the chorea. No history of rheumatism could be elicited. The case first came under the notice of my colleague, Dr. Constantine Goodell, who placed the girl on increasing doses of iodide of iron and arsenic, much to her benefit. When I saw her the movements recurred every few seconds and seemed confined to the flexor muscles of the forearm and fingers on the left side and to the flexor and adductor muscles of the left thigh and leg. No abnormality of the heart could be detected except a slight rapidity of beat. The girl's appearance, which I had been told was very anæmic, was quite healthy. Dr. Goodell's treatment was continued with such marked and increasing good effect that towards the close of pregnancy the movements were little noticeable, whereas at first they had been so energetic as to interfere with locomotion. In the seventh, eighth and ninth months, however, during the time corresponding to the menstrual period, the disease grew worse and was associated with painful uterine contractions and a slight hæmorrhage. On November 11 active uterine contractions began, the pains recurring every two or three minutes, and the uterus contracting freely. This continued for four days, without in the slightest degree effecting the dilatation of the os; the patient meanwhile obtaining no rest day or night and the chorea growing rapidly worse again. Finally, on the fifth day, a bougie was introduced within the uterus. In three hours dilatation had begun and in twelve hours the baby was born. Fifteen days later the chorea had practically disappeared, and the child, carefully watched, has manifested no sign of the disease.

DR. GOODELL remarked that Dr. Barnes had collected fifty-six cases of chorea complicating pregnancy, and had found the mortality very heavy. Dr. Goodell had had one case of extreme severity at the Preston Retreat. The movements were unilateral, during labor they were astounding in their violence. Every muscular grimace and contortion possible was assumed. The patient was placed on thick carpets on the floor to prevent injury. This condition continued after labor until, completely worn out, she died. He had another case which, however, was controllable. The complication is a very fatal one, the mortality being about 30 per cent., if he remembered correctly Dr. Barnes' statistics.

DR. JOS. PRICE presented a large

MULTILOCULAR CYSTOMA THAT HAD COMPLICATED PREGNANCY AND LABOR.

The patient was very large and twins were ex-

pected, the presence of the tumor not being diagnosed until after the delivery of the child. The tumor had many adhesions to surrounding surfaces, including the bladder. The recovery was slow and poor after the labor, but quite satisfactory after the removal of the tumor.

(To be concluded.)

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Prophylaxis of Diphtheria—Induction of Premature Labor in Anæmia and Amblyopia from Albuminuria of Pregnancy.

At the second January meeting of the Academy of Medicine, Dr. A. Caille read a suggestive paper relating to the prophylaxis of diphtheria. He said that it was a fact that members of certain families, and especially children, had an attack of diphtheria every spring or autumn, and it had occurred to him that in all probability in such cases the microbes of the disease remained permanently in the system, continuing in a dormant condition until some hyperæmia of the faucial or nasal mucous membrane afforded an opportunity for the diphtheria to break out afresh. The disease was thus propagated by a process of auto-infection.

In order to make a practical test of the correctness of this hypothesis he selected eight individuals, of different ages, all of whom had had diphtheria at least twice—some of them a considerable number of times—prior to October 1, 1885. All belonged to families whom he had long known and who had continued to occupy the same residences or apartments. The first thing that he did was to cause all carious teeth to be filled or extracted. He then directed the mouth to be rinsed, the throat to be gargled, and the nose to be cleansed three times a day with either a 3 per cent. solution of potassium permanganate, a weak solution of liquor sodæ chlorinate, or a saturated solution of boric acid; the different solutions to be alternated with each other from time to time. In very young children the antiseptic solutions are dropped into the nostrils with a pipette. This practice was maintained throughout the year with the exception of the summer months, during which none of the subjects had ever had diphtheria.

As a result, apparently, of these precautions, not one of the individuals referred to has had an attack of diphtheria up to the present time, although some of them in the meanwhile have been exposed to the disease by other members of the family having it. While this result, Dr. Caille said, did not, of course, afford absolute proof of the truth of the view advanced by him or of the prophylactic power of such a plan of procedure as that described, it did go to show that if the nasal and oral cavities are kept clean by antiseptic washes, diphtheria was less liable to occur than if no such precautions were taken.

He then went on to say that hitherto in diphtheria far less attention had been paid to the matter of pre-

vention than to that of treatment. One reason why it was difficult to employ an intelligent prophylaxis was because of our ignorance in regard to the nature and significance of so-called diphtheria; and since we could not in many instances distinguish between a contagious and a non-contagious sore-throat, the problem presented was a very unsatisfactory one to deal with. Still, as there was no specific treatment for diphtheria, prophylaxis, in the present state of our knowledge, was of more value to the public at large than treatment. Prophylactic measures might be divided into those relating to general sanitary conditions and those confined within the family. It was an unfortunate fact that in a large city the great majority of the inhabitants were unable to live in perfectly healthy dwellings, and hence the great importance of individual prophylaxis was obvious.

Dr. Caille concluded with some additional remarks on individual prophylaxis. He stated that enlarged tonsils increased the liability to diphtheria, and recommended that these should always be removed with the knife or, better, the galvanocautery. Carious teeth should be extracted or filled, and he thought that provision should be made by which the poor could have dental cavities stopped with cement or amalgam free of charge or at a merely nominal price. He advised that parents should inspect their children's throats every morning before sending them to school, and that all children should be taught how to gargle at an early age. Children with sore throats should not be allowed to go to school. Kissing children on the lips should be forbidden, and parents should be urged to keep the upper air-passages of their children in as healthy a condition as possible.

In the discussion following the reading of the paper Dr. George T. Harrison said he had had such painful experience in the treatment of diphtheria that he was especially glad to hear something in regard to the prophylaxis of the disease, and he believed that the adoption of such precautionary measures as had now been suggested would be a step in the right direction. He was also glad, he said, to hear Dr. Caille emphasize the danger connected with so-called follicular amygdalitis, to which Dr. Jacobi had directed attention, as this was a matter in regard to which the profession as well as the laity, needed to be on their guard.

Dr. Fruitnight said it was a common experience to find that the first case of diphtheria in a family had advanced to a very dangerous degree before the medical attendant was called in, and, consequently, was very likely to prove fatal. It was also noticeable that afterwards in such families the parents themselves often instituted a system of prophylactic measures; making it a daily practice to examine the children's throats, etc.

Dr. S. Bamch said he should think that the daily washing out of the nose by the insufflation of cold liquids was a very dangerous practice, on account of the liability to excite serious ear trouble.

Dr. Caille explained that he did not recommend the employment of cold liquids, and Dr. T. R. Pooley said that if the nasal douche was avoided and warm fluids were used in the form of spray or by dropping

into the nostrils, he did not think there was much risk of causing disease of the middle ear. The safest and best method of washing out the nose was by means of the post-nasal syringe.

Dr. Seibert called attention, by way of supplement to Dr. Caille's paper, to the importance of keeping children's stomachs in good condition, in order that the mouth and tongue might be clean. In his experience a furred tongue was always a harbinger of the development of diphtheritic trouble, and he thought that the candy shops in the vicinity of the public schools were responsible for a good deal of the diphtheria now so prevalent.

The President, Dr. Jacobi, said that if he understood the reader of the paper rightly, he held that when a patient had once had diphtheria the germs of the disease are likely to remain secreted in the mucous membrane and lymphatic glands; and he quite agreed with Dr. Caille in this opinion. Many of the worst cases of diphtheria were those in which there was immense glandular swelling with oedema. Such cases were very likely to prove fatal, but if the patients recovered the improvement dated from the time when these symptoms began to diminish. He was convinced, therefore, that diphtheritic germs were liable to remain in the lymphatics.

If, as has been remarked, the mouth and nose were in a healthy condition, diphtheria was always less likely to occur; while, if an epidemic of the disease appeared in a neighborhood, the children living there who had a catarrh were especially liable to be attacked. Diphtheria was like erysipelas in this respect. When there was an epidemic of the latter disease in any locality the slightest scratch was likely to induce an attack of it, while those who were free from any sore or abrasion of the surface escaped.

There was another way in which diphtheria recurred, and in connection with this there was a point of great practical value in its prevention to which Dr. Jacobi said he desired to call attention. It had often been noticed that cases in which it was thought the attack was about over had a relapse, and in some instances there would be three or four attacks in quick succession. The reason for this was simply because the room, the bed, the curtains and the carpets had become infected; and he had therefore made it a rule, whenever this was practicable, to change the room of the patient every two or three days, even if the room to which the removal was made was not as desirable as the one first occupied. In some cases he had found it necessary to have the patient taken out of the house altogether.

In answer to a question by Dr. Holt, as to whether there were any sufficient data to indicate that children with enlarged tonsils were more subject to diphtheria than others, Dr. Caille said that his own experience went to show that such children were more liable than others to be attacked, but he had found that as a rule the disease in these cases was of a comparatively mild form.

Dr. Jacobi said that the reason why the tonsils were so frequently the primary causes of diphtheria was because they stood so much in the way of the air-current; so that deposits were extremely liable to take place

on them. Again, whenever the tonsils were enlarged there was a liability of mucus accumulating behind them. Enlarged tonsils were usually combined with a subacute or chronic nasal catarrh or pharyngitis, and the sooner, therefore, the tonsils were reduced, and the pharyngitis removed, the better would be the prospect of the child's escaping diphtheria.

Dr. Joseph W. Winters said that when diphtheria appeared in a family, in addition to enforcing strict isolation and attending carefully to disinfection and the general sanitary condition of the premises, he inspected the throat of every member of the household daily, and if there were any children, ordered them to take full doses of tincture of chloride of iron (say 20 drops or more, three times a day), and tonic doses of quinine. At the same time he directed that they should be kept in the open air as much as possible, should sleep in rooms free from pipes connecting with sewers, and be given simple diet. Their digestive organs should be maintained in good condition, and to this end he usually prescribed small doses of mercury as a purgative two or three times a week. When adopting these precautions he rarely saw cases of diphtheria occurring in the same family.

On the same evening Dr. T. R. Pooley read a paper on "The Induction of Premature Labor in Amaurosis and Amblyopia from Albuminuria of Pregnancy," in which the following conclusions were arrived at:

1. In all cases of pregnancy, not only should examinations of the urine be systematically made, but the eyes should be examined with the ophthalmoscope, since, in a large proportion of cases where eye-troubles exist, the patients make no complaint of disorders of vision. Frequently such troubles can be detected with the ophthalmoscope long before any disease of the kidney is shown in the urine.

2. In uræmic amaurosis without changes in the eye visible to the ophthalmoscope, even should the usual accompanying symptoms, such as dizziness, nausea and threatened convulsions, be absent, their supervention is soon to be anticipated; and the immediate induction of premature labor is indicated, without waiting until the life, as well as the sight of the patient is in danger.

3. In neuro-retinitis the induction of premature labor is not only justifiable, but urgently demanded. In some instances it is called for even in the earlier months of pregnancy.

4. It is required in certain cases of eye-trouble recurring in successive pregnancies.

5. A woman having once suffered in this way during pregnancy, the relationship of cause and effect should be fully explained both to herself and her husband.

F. B. P.

ASSOCIATION ITEMS.

LIST OF OFFICERS.—When the list of Officers of the Association was published the address of Dr. F. C. Hotz, Chairman of the Section on Ophthalmology, Otology and Laryngology, was incorrectly given,

owing to a somewhat recent change. It should have been 103 State St., Chicago, Ill.

The chairmen of several of the Sections have already reported lists of excellent papers promised for the coming meeting.

BOOK REVIEWS.

THE RECTUM AND ANUS: Their Diseases and Treatment. By CHARLES B. BALL, M. Ch., F. R. C. S. I., Surgeon to Sir Patrick Dun's Hospital, etc. With 54 Illustrations and four Colored Plates. 8vo, pp. viii. 410. Philadelphia: Lea Brothers & Co.; Chicago: A. C. McClurg & Co.

This is a systematic and complete treatise of over 400 pages, well illustrated, and brought down to the present in point of all important improvements. Considered as a whole the work is much more fully elaborated than either Allingham's, Curling's, or Kelsey's, although apparently not a large treatise, being printed after the custom of the Lea Brothers, in compact form, on thin paper. Little attention is given to the injection treatment of hemorrhoids, which the author speaks very slightly of. The same may be said of various other methods of the American "rectal specialists." Without directly intending it, probably, the author very neatly pricks the pretensions of those that claim originality for the discovery of rectal "pockets" by giving quite a complete summary of the pathology and treatment as practiced by many surgeons in ulcerations of these pouches. Not only does it appear that these were anatomically very well known, but that they have been split up and otherwise operated upon many times by surgeons for various reasons. Many chapters of this work are commendable for the thoroughness and clearness of their discussion, and none more so than that upon fissure, which gives the best contribution we have as yet seen to the pathology and causation of this singular affection.

THE THROAT AND ITS DISEASES, Including Associated Affections of the Nose and Ear, with 120 Illustrations in Color, and 200 Engravings Designed and Executed by the Author, LENOX BROWNE, F. R. C. S. E., etc. Second edition, Rewritten and Enlarged. 8vo, pp. 614. Philadelphia: Lea Brothers & Co.; Chicago: A. C. McClurg & Co.

The author of the volume before us will be remembered by many American readers who attended the last International Congress for the able paper that he presented and discussions that he took part in, as well as for his genial, kindly manner. The first edition of this work has been well known, but has been completely rewritten by the author for this, the second edition. In reading the book one cannot but be impressed with the clearness of the explanations and the practical character of the advice. The beauty, fulness and correctness of the illustrations enhance the value of the work very greatly. The colored illustrations, which are beautifully ex-

ecuted, are much better than those of any similar text-books with which we are acquainted. The chapters on diseases of the nose and ear might advantageously be increased in number, in order to make the work still more complete. It will undoubtedly prove one of the most popular works upon the subject, both among practitioners and students.

MISCELLANEOUS.

THE WILLIAM F. JENKS MEMORIAL PRIZE.—The First Triennial Prize, of Two Hundred and Fifty Dollars, under the Deed of Trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Diagnosis and Treatment of Extra-uterine Pregnancy."

The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children;" and that "the Trustees under this deed for the time being, can in their discretion publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may in their judgment be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said Trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., addressed to Ellwood Wilson, M. D., Chairman of the William F. Jenks Prize Committee, before January 1, 1889.

Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if no essay submitted is considered worthy of the prize.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JANUARY 28, 1888, TO FEBRUARY 3, 1888.

PROMOTIONS.

Lt.-Col. Charles Page, Surgeon, to be Asst. Surgeon-General with rank of Colonel, November 17, 1887.

Major James C. McKee, Surgeon, to be Surgeon with rank of Lieut.-Col., November 17, 1887.

Capt. Alfred C. Girard, Asst. Surgeon, to be Surgeon with rank of Major, November 17, 1887.

First Lieut. W. W. R. Fisher, Asst. Surgeon, granted leave of absence for one month, on surgeon's certificate of disability. S. O. 4, Dept. Cal., January 20, 1888.

First Lieut. H. I. Raymond, Asst. Surgeon, ordered to Ft. Bidwell, Cal.

First Lieut. W. W. Fisher, Asst. Surgeon, ordered to Presidio of San Francisco, Cal. S. O. 25, A. G. O., January 31, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING FEBRUARY 4, 1888.

P. A. Surgeon D. A. Carmichael, detailed as attending surgeon and acting Chief Clerk Supervising Surgeon-General's Office. February 2, 1888.

P. A. Surgeon F. M. Urquhart, granted leave of absence for twenty days, on account of sickness. February 3, 1888.

Asst. Surgeon L. L. Williams, ordered to examination for promotion. February 2, 1888.

THE

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CHICAGO, FEBRUARY 18, 1888.

No. 7.

ORIGINAL ARTICLES.

A CASE OF EPILEPSY CURED (APPARENTLY) BY THE CORRECTION OF AN ERROR OF REFRACTION.

Read before the Chicago Medical Society, January 16, 1888.

BY J. ELLIOTT COLBURN, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOTOLOGY IN CHICAGO POLYCLINIC;
OPHTHALMIC SURGEON TO COOK COUNTY HOSPITAL; ASSISTANT
SURGEON ILLINOIS STATE CHARITABLE EYE AND EAR
INFIRMARY, ETC.

The following case, to which I wish to call your attention, first came under my observation in June, 1882:

Mr. T., æt. 24 years, 5 ft. 9 in. in height, weight 160 lbs., well proportioned, features regular, except that eyes are deeply set and appear small; occupation student.

He consulted me for mental confusion and inability to read or study without flushing of face and pulsating of superficial arteries, with sensation of pounding in back of head and neck, with marked sensations of vertigo which would disappear when eyes were closed. At times, following prolonged effort, the confusion of ideas was painful and was accompanied by visions which he recognized as such, at least a part of the time. He had at this time some slight disturbance of digestion and constipation, due apparently to sedentary life. He admitted masturbation in early boyhood, but not since; had had frequent seminal emissions, more marked during the past two years and always following hard study. I gave him such treatment as his case seemed to demand, with the result of benefiting his digestion; otherwise the case remained about the same. About this time, for some conduct not in accord with the rules of the institution, he was brought before the Faculty. The President, finding that he had consulted me, came to find out whether the gentleman was really ill, or whether there was good reason for his strange actions and low standing in the school. From him I learned that the patient was constantly manifesting strange mental phenomena, by them attributed to viciousness and low mental and moral character. At times he was extremely dull and morose, and again almost brilliant and exemplary.

I then inquired more carefully into the case from himself and others, and diagnosed a condition bordering on *petit mal*, with impulses. I also found that he was unusually bright as a critic of orations and

sermons, while it was with difficulty that he was able to grasp the matter of a printed page. He was advised to leave school for some occupation less sedentary and requiring less mental work. This he did. At the end of the summer vacation he returned apparently perfectly well.

About this time I left that field of work and lost track of my patient. From a student in the institution at that time I learned that for some weeks following his reentrance he did good school work, but resumed his old habits and, after a stormy time with the Faculty, left the school. After some difficulty, he was admitted to the ministry, for which he had been preparing. About two years subsequent to my first acquaintance with him, during a sermon, he was attacked with a marked epileptic seizure, and from that time on he was subject to attacks more or less severe, occurring in the frequency of from one a day to one in two or three weeks.

Restraint was considered advisable, and he was confined in an asylum at intervals for about two years. During one of his more prolonged intervals of immunity from fits he escaped from the asylum and went to a neighboring State, where he endeavored to resume his work, but the return of the malady again unfitted him for ministerial labor and he resorted to canvassing. The study necessary for success in this field soon increased his trouble.

About this time he recalled my opinion and prognosis of his case, and finding my address called upon me for advice. He came to me in August, 1886. I found him at my office in a truly pitiable plight. He had been a number of hours on the cars and had had numerous seizures more or less severe; he was hungry, bewildered and incoherent, with marked delusions. I hastened to put him in better condition, and on the following day elicited some of the facts given above.

His trouble continued in spite of sedatives, and I referred him to Dr. C. D. Wescott for examination and advice. Dr. Wescott gives me the following notes of his case:

"Mr. T. first called upon me October 23, 1886. I pronounced him an epileptic as he entered my office, from his appearance alone; the congested countenance and excessively mobile pupil. He described very well seizures of *petit mal* occurring every two or three weeks with or without unconsciousness, frequently followed by uncontrollable impulses and hallucinations. His judgment was evidently impaired, and he presented every appearance of one suffering

from the effect of that disease. Among the prominent symptoms was his inability to read without the greatest fatigue and general nervous irritation. I put him on small doses of the mixture of bromides and gave him careful directions as to diet. The bromides he took only a short time. I gave him a stomach tonic and laxative. He appeared to improve for a short time and then remained in about the same condition, always being irritated by any attempt at mental effort.

"The only attack which I know of his having, following Dr. Colburn's treatment, was about January 25, 1887. He came into my office feeling unusually well, jovial and lively. A little incoördination was noticeable in his gait and, in spite of my acquaintance with the precursor of epileptic mania, I was inclined to suspect alcohol. After assuring myself that he had had no liquor, I prescribed saline cathartics and sent him home. In the evening I was sent for and found him in a condition of mild mania, with delusions and hallucinations and a fear of impending evil. The attack was easily controlled with chloral and bromides and he was soon about again, but for some days was dull and depressed and incapable of mental or physical exertion. Since the above indicated attack I have seen him but seldom, and not at all of late, but when I talked with him last his mind seemed stronger, his articulation was more natural, and his countenance wore a more intelligent and natural expression."—C. D. WESCOTT.

On referring to some private notes made in 1882 I found that I had at that time examined his eyes and obtained .50 D. manifest and 2 D. latent hypermetropia. I at once acted on the suggestion of Dr. George T. Stevens, of New York, who had kindly admitted me to his private cases. I atropinized my patient, verifying my former examination. Also found insufficiency of the external recti equal to 8", which was treated by exercise with the prisms, soon obtaining a more normal balance of the recti muscles, and prescribed a + 2 D. for constant use. He was directed to discontinue the treatment instituted by Dr. Wescott. From this time on there was a marked improvement of all his symptoms, mental and physical. During January, 1887, he had a marked attack, as mentioned by Dr. Wescott, but at that time there was also quite an increase of temperature and disturbance of stomach and bowels, showing that the possible exciting cause of this attack was some malarial disturbance.

For about one year he has had nothing resembling his former trouble. His mind has become active and his personal appearance changed to that of a man in perfect health. And he is now a perfectly well man, taking long trips through the country; the trusted employé of one of our large publishing houses. For about a year he has used his glasses for near work only.

In June, 1887, my patient brought his mother to the city for advice. I referred her to Dr. Lyman, and from him have the following notes:

"The case is one of neurasthenia with tendency to masked epileptic convulsions with vertigo, tottering, and unsteadiness of gait."

Dr. Lyman referred the case to me for an examination of the eyes. I found on examination that there was hypermetropia of 2 D. i D. ast. and presbyopia of 2 D., all of which I corrected. Her daughter, who accompanied her, was emmetropic with no nervous tendencies, and resembled her father, while Mr. T. very strongly resembled his mother. Since the treatment instituted by Dr. Lyman, iron, quinine, strychnia, and the constant use of glasses for distance, the mother has improved and is now quite strong and well.

Mr. T. has a brother now confined in an asylum for some form of insanity. I have written for the history of this case. I learned from the mother that the brother of my patient was subject to sick headaches, school headaches, etc., and that he was an erratic child, gradually increasing in peculiar tendencies until marked mental disturbance was developed.

To me the point of special significance is: *The hereditary hypermetropic error of refraction*; in the mother, apparently causing nervous prostration; in the son, all of the progressive symptoms of cerebral disturbance up to mania; the apparently direct relation, in case of Mr. T., between the amount of work done and the progressive congestion of face and brain; that any return to the use of the eyes would precipitate severe nervous explosions, and that the attacks were seldom caused by other irritation; that the correction of the hypermetropia was followed by a great improvement till, within four months from the time of the adjustment, the glasses had so far relieved his trouble that he has had no nervous explosions to date. Headaches, indigestion, constipation and seminal emissions are perfectly relieved, and the patient is able to do a large amount of work, and read, without trouble. In a letter just received from Mr. T. he says:

"Although I have always had a desire to be a student of general knowledge yet, whenever I attended school, I was considered lazy and entirely out of my place, and until the latter part of my school days I was made sport of both by my associates and instructors, because they could see no excuse for me, as I seemed to be in perfect health.

"Later on my friends noticed that my face was flushed at times, and my general dulness of expression. Many accused me of taking opium.

"In recitation work I always stood the lowest in my class, but in examinations my standing was a great deal better; which, of course, my instructors were at a loss to know how to account for. I do not think that the cause of my poor recitations was laziness, but it was owing to the difficulty which I had in reading. Even aside from the dry reading of textbooks I was never able to read more than a few minutes at a time without suffering pain from my eyes to the back of my head, and in fact my whole head seemed to be very much irritated, which made me flighly at times. I would have impulses to jump and scream. These symptoms of disorder were more severe if I did any reading in the evening.

"While sitting alone or lying in bed I would see flashes of light, imagine things, and in my mind would go on a journey and perform daredevil feats. At

times I would be conscious of being in my room during such trains of thought, and at others not. Sleep was an impossibility till 3 or 4 o'clock in the morning.

"This trouble grew upon me until I was forced to leave school. Then I spent my time in going from place to place preaching as best I could, but doing very little reading, and I thought I was getting better.

"About two years and a half ago I was called to attend a funeral. For a few weeks previous to this call I had not been feeling as well as usual. At first I refused to go, but I was finally persuaded to go upon a promise that little would be required of me. I had read but a few sentences from the book which is used on such occasions when I saw a quick succession of dark waves pass before my eyes, I lost control of my muscles, and the next I knew I was lying on a bed in the next room. Dr. —, who was standing by me at the time, said that all he noticed until my muscles gave way was that my face flushed a little. However, I was soon able to finish the service and go home. These spells became more frequent and severe till finally I was put in an asylum.

"So far as I know I never had a convulsion, and was not always wholly unconscious, but always lost control of my muscles. They never came on unless I overdid in some way either physically or mentally, or under some excitement.

"The asylum gave me temporary relief, but after I had been out a short time the trouble returned. And until I had put myself under your treatment for a few months, I did not think that there was any help for me. Since then I have gained in health and am now able to do a good day's work without any symptoms of the old trouble."

126 State Street.

PRIMARY TUMOR OF THE BROAD LIGAMENT. WITH A TABLE OF 17 CASES.

Read before the Chicago Gynecological Society, Nov. 18, 1887.

BY BAYARD HOLMES, M.D.

OF CHICAGO, ILL.

I have the pleasure of presenting a specimen of a fibroid tumor resembling those of the uterus, and calling your attention to a small group of neoplasms termed by Säger "primary dermoid tumors of the broad ligaments."

The patient from whom this specimen was removed was a well-developed woman, 35 years old. She had been twice married. By the first marriage she was without issue. About a year after the second marriage, she gave birth to a child that is now 3 years old. At this confinement there was a laceration of the cervix uteri, which was operated upon in February, 1886. The pelvis was thoroughly examined at that time, while the patient was under the anæsthetic, and nothing abnormal detected. Following the operation there was a slight retroversion, which was treated with a pessary for a month or two. Toward the last of May, 1886, this pessary was removed by the patient herself. The menstruation was scanty in June, and she consulted her physi-

cian, who concluded from an increased size of the uterus that it was pregnant and refrained from further examination. In July again the menstruation was normal, and an examination at that time first discovered a small tumor, about the size of a black walnut, just behind the uterus. The patient was put in the knee-chest position, and the tumor pushed back almost out of reach. It was movable, and free from the uterus. The tumor had all the appearance of a displaced, enlarged ovary, and it was so considered at the time. Repeated examinations during the following months revealed its rather rapid growth, and its increasing immovability. A dull fluctuation was repeatedly detected. At last, the inconvenience to the patient became so great that she decided for herself that it should be removed.

The patient had never had any pelvic inflammation, and the puerperium was unattended by sepsis.

I had the privilege of making the necessary antiseptic preparations antecedent to the operation. Every scientifically indicated preliminary precaution in the preparation of the room, the instruments, the patient and the operators was taken. The room was large and airy, having three south windows, and one opening to the west. The house was a frame dwelling which had been in use many years. The floors were carpeted throughout the house. I had the carpet removed from the operating room, which was on the second floor, all the wood-work thoroughly scrubbed, and the walls freshly papered. There was not sufficient time to lay a new floor, and the old one was too much worn to be made clean. I had it covered with a carpet of thick white duck. After this had been tacked down, all the wood-work and the necessary furniture and this carpet were scrubbed with a 1:1000 sublimate solution. Just before the operation the temperature was raised to 90° F., and a pound of carbolic acid evaporated in the room.

The operation was performed on the morning of June 5, 1887. There were present the operator, Dr. J. W. Streeter, three assistants, and the nurse. Upon opening the abdomen, it was found impossible to bring the tumor in the line of the incision. It lay close to the laterally turned uterus, and occupied all the space in the right side of the pelvis. It was found impossible to move it in any direction more than an inch. Two-thirds of the tumor was visible, covered by smooth peritoneum, which was reflected backward and directly forward upon the walls of the pelvis. No ovary was found on the right side. The left ovary seemed perfectly normal. The tumor felt hard, elastic, and smooth. A transverse incision was made through its peritoneal covering, and the tumor carefully enucleated with dull instruments. There was very little hemorrhage. The broad base from which the tumor was removed was then sewed through with a curved needle and strong silk. This was tied at every stitch. The peritoneal edges were trimmed off, turned in, and fastened with fine silk. The operation lasted two hours. During the following day the temperature rose to 103° F., but it gradually fell to below 100° at the end of the second day. There was no other unfavorable symptom.

TABLE OF SEVENTEEN CASES.

Observer.	Age of Patient.	Tumor Recognized.	Symptoms.	Fluctuation.	Diagnosis before the Operation.
1.—Schetelig. Arch. f. Gyn., I, 259.	41 years. Multipara.	2 years.	Tumor elastic; in general form spherical; in places irregular and hard; above the symphysis a tympanic zone. Uterus movable and normally located.	Fluctuation indubitable.	Ovarian cyst. Diagnosed by another surgeon.
2.—Schmid. Prager med. Wochenschr., 1878, No. 35, 260.	35 years. One child.	1½ years after delivery.	After previous peritonitic symptoms, rapid development in the right pelvic cavity of a movable tumor. Descendens uteri. Prolapse of the ant. vaginal wall.	Wanting.	Solid tumor of the right broad ligament. By internal examination both ovaries were recognized.
3.—Maculicz. Wien med. Wochenschr., 1879, No. 21, 261.	.....	.....	Periodical pain in the pelvis. For two or three years ascites present. Umbilical hernia since one year. Tumor freely movable, somewhat uneven, as large as a man's head.	Wanting.	Solid tumor of the broad ligament.
4.—Gayet. Lyon Médical, 1874, No. 9, p. 273.	42 years. Multipara	7 years.	All the appearance of a simple ovarian cyst.	Present. Very pronounced.	Ovarian cyst with short pedicle.
5.—Sänger. Arch. f. Gyn., XVI, 284.	49 years. One child.	10 months.	Failure of the menses to appear for 7 months. Patient considered herself pregnant. Prolapse of the uterus and vagina.	Present. Very pronounced.	Left sided ovarian cyst.
6.—Bardenheuer. Drainirung d. Peritonealhöhlen. Stuttgart, 1881, S. 113-118 (in Hegar.)	.....	.....	A large tumor which was located deep in the pelvis and extended somewhat above it.	.....	.....
7.—Péan. (In Hegar.)	.....	.....	.....	.....	.....
8.—Ruschmann (operator, Billroth). Wiener Wochenschrift, 1880, No. 28.	28 years. 4 para	.....	Increase in the circumference of the abdomen for three years. Dull elastic consistency. The percussion dullness extended to that of the liver and spleen.	.....	.....
9.—Rydygier. Deutsche Zeitschrift für Chirurgie, XV, p. 279.	Multipara.	.....	.....	Pseudo-fluctuations.	Solid pediculated tumor of the uterus.
10.—Chimiaux. Arch. de Toccol. et des mal. des femmes, Juillet 1880, p. 439.	32 years. Multipara.	.....	The tumor grew steadily but without pain. It appeared to arise from the uterus. It moved with its movements. Remarkable developments in the course of a half year.	.....	Solid pediculated tumor of the uterus.
11.—Schroder. Sitzung der Gesellschaft f. Geburtsh. u. Gynaek., Berlin, June 8, 1880. Berlin klin. Wochenschr., 1881.	.....	.....	.....	.....	.....
12.—Freund. Gynecologische Klinik, '85, p. 289-293.	32 years. Multipara.	Recognized 5 yrs., but sized, somewhat uneven, solid, elastic, growing more backward, separated from two smaller cherry-sized tumors by a distinct groove. Uterus movable. Both sound ovaries easily recognized.	Pain in the pelvis several weeks after her first normal labor, protracted menstruation. The tumor grew slowly, but undoubtedly.	None.	Fibroid of the left broad ligament.

TABLE OF SEVENTEEN CASES.

Condition Found at the Operation.			Operation.	Anatomical Diagnosis	Result.	Remarks
Pedicle.	Uterus.	Ovary				
Long, somewhat thick; attached to right broad ligament.	Normal	Normal		Cystomyoma teleanglecto-cavernosum ligamenti latii dextra.	No operation, death from chronic peritonitis spreading out over normal. Right ovary from local suppura drawn up on the anterior, five peritonitis, under surface of the tumor.	Uterus free without any adhesions to the tumor. Left ovary normal.
Thin, in necrosis.	Free, infan- tile.	Right ovary in necrosis wholly separated from the tumor. On the left ovary a pea-sized pedunculated fibroma.		Fibro-sarcoma of the right broad ligament. Wgt. 10 lbs.	Pedicle dropped. Course without fever. Healing by first intention.	
Wanting	Normal	Normal		Fibroma of the right broad ligament. Tumor strongly edematous. Wgt. 10 lbs.	Pedicle dropped. Rec-very retarded tumor, arising from the right by secondary intra-parovarium, a small der- al- d- m- n- a- hamor- moid cyst. orthage and abdominal abscess.	On the ovarian side of the tumor, arising from the right by secondary intra-parovarium, a small der- al- d- m- n- a- hamor- moid cyst. orthage and abdominal abscess.
Short and small.	Normal	The left ovary behind the anterior tumor edematous, beset with follicular cysts, free from the ligamentum latum. Right ovary apparently normal.		Cystomyoma of the left broad ligament.	Attempted removal. Suture of the residue of the cyst in the abdominal wall. Gangrene of the pelvic tissues. Death on the 14th day.	
				Fibromyoma hydropicum ligamenti latii sinistri. Double tumor. The anterior small, intraligamentous, the large one extra-ligamentous, intra-peritoneal and pedunculated. Weight 16 lbs.		
			Laceration of the anterior wall of the rectum. Intestinal suture. Injury of a large parametrian blood vessel in arranging the drainage.	Intraligamentous myoma.	Death, four hours after the operation from hemorrhage.	
Short			Pedicle treated as an ovarian pedicle.	Medullary sarcoma of broad ligament.	Death on the second day of peritonitis.	
None present.	Free, without attachment to the tumor.		Vigorous hemorrhage in separation from the peritoneum. The tumor had grown from the back side and turned forwards.	Retroperitoneal fibro-myoma, by which the kidney was displaced. The sessile tumor lay between the leaves of the ligamentum latum. Weight 36 pounds.	Death from peritonitis on the fifth day.	The tumor was very vascular and gave the impression of a firm, jelly-like tumor. It was covered with a very thin peritoneum.
None	On the uterus, two sub-peritoneal tumors about the size of small apples	Free.	The tumor was raised out of its place without the aid of instruments and without the application of a ligature; the anterior leaf of the broad ligament was grown fast to the abdominal wall.	Fibromyoma between leaves of the right broad ligament. The tissues were here and there colloid degenerated.	Recovery.	
Present	Free	Free.	The tumor was attached to a pedicle which arose from the left broad ligament.	Cysto-sarcoma of the left broad ligament; wgt. 12 lbs.	Death on the 13th day of peritonitis, which certainly had wide-meshed tissue with no access in the neighborhood of the ped- am- n- a- tion of the tumor was made.	The tumor presented a tremulous, soft mass, made up of an ab- sized cavities within. No access in the neighborhood of the ped- am- n- a- tion of the tumor was made.
				Fibro-myomatous tumor.		Discovery of tumor, which was from the left broad ligament, during the removal of an eight-sided ovarian cystoma.
None	Movable.	Both present, sound	Eucleation.	Myofibroma cysticum intra-ligamentare. Wgt. 23 lbs. Prof. Cohnheim confirmed the diagnosis.	After the operation there was a second- clearing the sessile tumor was controlled by compression. Tetanus on the 6th day, in spite of which patient recovered and left the hospital after six weeks.	The ureter lay bare in entanglement with the tumor. There was a second- clearing the sessile tumor was controlled by compression. Tetanus on the 6th day, in spite of which patient recovered and left the hospital after six weeks.

TABLE OF SEVENTEEN CASES—CONTINUED.

Observer.	Age of Patient.	Tumor Recognized.	Symptoms.	Fluctuation.	Diagnosis Before the Operation.
13.—Freund. Loc. cit.	30 years. Nullipara.				Double fist-sized myoma of the uterus and a tumor in the left broad ligament.
14.—Freund. Loc. cit.	30 years. Sterile wife of a man's fist, a plum-sized tumor of the left broad ligament was detected.	14 days after the removal of a sub-peritoneal myoma as large as a			Solid tumor of the left broad ligament which became as large as a child's fist, still separated from the uterus by a distinct furrow.
15.—Bantock. The British Gyn. Jour., N, August, 1887.		Tumor recognized nine months before operation, soon after the birth of the last child.			Believed to be ovarian.
16.—Fenger. Urpub. lished.	20 years. Multipara.	About one year.	Caused little inconvenience, but aroused the suspicion of pregnancy.	None.	Solid tumor of the left broad ligament. Separated from the ovary and uterus by a recognizable space, filling the pelvis and extending half-way to the umbilicus, somewhat movable. Uterus and ovary separately movable.
17.—Holmes. (Operator, Streeter.) In this article.	35 years. 1-para.	Tumor recognized eleven months before operation, when it was movable from the uterus.		Pseudo-fluctuations.	Tumor of the right ovary

The sutures were removed from the abdominal wound on the fourth day, and the second and last dressing applied to the abdomen. There was not a particle of suppuration at any time, nor any pain in the line of the abdominal cut, or in the region of the operation. There was just a show of blood on the vaginal tampon where it lay against the *os uteri*. The patient was somewhat troubled with borborygmus during the first week, and at the end of a month had an attack of gastro-enteritis. She has now regained her former health and strength, and has menstruated regularly and normally.

The tumor has all the appearance of a uterine fibroid. It is almost perfectly spherical and smooth. It is about the size of a man's fist. The cut surface is smooth and white, with a few cavernous sinuses, filled originally with a clear serous fluid. A piece of the fibrous capsule is still attached to one side of the tumor. The drawings which I present were made from stained sections, with a one-tenth inch immersion objective, and an inch eye-piece. The nuclei resemble very much those of unstriated muscle fibres. There is very little, if any, pure fibrous tissue to be found in the body of the tumor. Near the blood-vessels, the nuclei are ovoid or spherical, and very large. These are, no doubt, the round cells noticed by Kleinwächter (49) in small uterine fibroids. They seem to be well nourished cells, undergoing rapid mitosis, or indirect cell division. These large round cells are easily distinguished from transverse sections of the long nuclei by their size and arrangement.

This tumor, then, is leiomyoma, that is, a myoma that originated from a matrix of smooth muscle tissue.

Such a matrix is found in the uterus, in the uterine ligaments, in the base of the ovary, in the walls of the bladder, and in the abdominal wall.

(a) A consideration of the history of the case shows conclusively that this tumor did not originate as a sub-peritoneal fibroid of the uterus. When first observed, it was quite a distance from the uterus, and freely movable from it in the pelvis. The pelvis was thoroughly examined under an anæsthetic four months previous to the appearance of the tumor, and nothing found.

It does not seem possible that a fibroid of the uterus could be so completely displaced either by puerperal contraction, or by the traumatism it suffered at the operation in February.

There remain to be considered the possibilities of an ovarian or a ligamental origin for our tumor.

(b) We have four methods of demonstrating the presence of smooth muscle-fibres in the broad ligament, the embryological, the anatomical, the physiological, and the pathological. The uterine ligaments contain plain muscle-fibres, which are prolongations of the superficial embryonal layer of the uterus. These fibres extend through the ring into the mons veneris, and out on the abdominal wall to the *linea alba*, and up over the posterior wall of the bladder.

Anatomically, these smooth muscular fibres have been found and described by Rouget (14), Klebs (16), Henle (17), and Luschka (19). They are also mentioned in Quain's Anatomy.

TABLE OF SEVENTEEN CASES—CONTINUED.

Condition Found at the Operation.			Operation.	Anatomical Diagnosis	Result	Remarks
Pedicle	Uterus.	Ovary				
None	Free	Both present.	After enucleation of the myoma of the uterus, a tumor of the ligament, the size of a 3 mo. gravid uterus, was removed. The peritoneal covering of the tumor was cut so that a continuous suture restored the relations of the parts to those of a normal ligament.			1. Left uterus in situ after the operation.
..... N operation.....						
None	Free	Both present.	Sub-peritoneal enucleation. Removal of diseased right ovary.	Fibroid of right broad ligament. The tumor arose on outer portion of the ligament beyond the ovary, which lay on its inner aspect.	Recovery.	Peritoneum freely movable over the surface of the tumor.
None	Free	Both present, healthy	Enucleation, partial closure of the peritoneal wound. Drainage by face showed multiple nut-meats of a Mucous sized and larger fibroids drain introduced into melted down into one large bottom of the unclosed and almost perfectly spherical peritoneal wound.	Fibroid of broad ligament. Death from sepsis sure of the peritoneal Weight, 4 lbs. The cut surface showed multiple nut-meats of a Mucous sized and larger fibroids drain introduced into melted down into one large bottom of the unclosed and almost perfectly spherical peritoneal wound.	Death from sepsis on the third day.	The omentum adherent to the tumor over a considerable surface contained encysted enlarged blood vessels, finger-sized, furnishing the principal blood supply of the tumor.
None	Free	Not found.	Transverse incision through the broad ligament and broad ligament; weight, 100 grammes. Enucleation of the sessile, immovable tumor.	Leiomyoma of the right broad ligament; weight, 100 grammes. In perfect condition.	Recovery without complication. In perfect condition.	Nov. 27, 1887.

They have also been assigned an important rôle in initiating labor (18). In examining the wall of cysts of the broad ligament, Spiegelberg (20) and Lawson Tait (21) have seen layers of unstriped muscular fibres three or four millimetres long. Other investigators have sometimes found and sometimes missed these bundles in the walls of parovarian cysts. There is, then, no doubt that a suitable matrix for the development of leiomyomas is found in the broad ligament.

Graetzer (26), investigating the origin of the tumors of the abdominal wall, has opened up all the possibilities of the origin of fibroid neoplasms in every part of the body. According to the theory of Cohnheim, there must be a matrix derived from the mesoblastic layer of the embryo. Thus the fibroids of the skin arise from muscoli erectores pili; those of the œsophagus, stomach, intestinal canal and prostate from the plain muscular fibres of these organs, and those of the abdominal wall from fibres going out from the uterus through the ligaments in the direction of their embryonal attachment.

Twelve well diagnosed connective-tissue tumors of the round ligament have been collected by Sânger (2). These represent almost every possible theoretical position in which such a neoplasm could be found, namely: in the round ligament, in the pelvis, in the canal and outside the canal, in the walls of the abdomen, or in the labia majora.

Small fibroids have been occasionally found in the broad ligament. Virchow (9) has made such an observation. The tumor was as large as a bean, and so

far removed from the uterus and from the ovary that no relation of origin to them could be considered. Such tumors have been thought by many investigators to arise from a displaced fragment of the ovary, or an accessory ovary.

If any doubt remained of the possibility of the primary origin of fibroid, or better, of desmoid tumors in the broad ligament, the careful consideration of Cohnheim's post-mortem examination, reported by Freund (28), would remove it. He found on the posterior wall of the uterus and of the bladder, and between the leaves of the broad ligament, even to the outer end of it, numerous isolated myomata of all sizes, from a cherry to an apple.

Sânger (1 and 2) has collected eleven cases of primary desmoid tumors of the broad ligament which reached a considerable size. There are several observations by other authors which swell the number of observed cases to nineteen or twenty.

Then it is both possible and probable that our tumor arose originally from the broad ligament in which it was found. It is still necessary to show that it did not arise from the ovary.

(c) There are at least three reasons for thinking that it did not arise from the ovary, namely: the form of the tumor, the microscopical elements of the tumor, and its manner of attachment, or want of pedicle.

The fibroids of the ovary are simply hypertrophies of the connective tissue of the ovary, and therefore their contour is irregular and nodulated, and not smooth and spherical like ours.

Fibroids of the ovary are composed almost entirely of fibrous tissues, and unstriped muscle-fibre is rarely and sparingly found, while our tumor is composed almost, if not entirely, of plain muscle-fibres.

Fibroids of the ovary have been shown by Leopold (28) to be connected with the ligament by a long, simple pedicle, which does not include the tube. One tumor lay deep and sessile in the pelvis.

It is not significant that a diagnosis of an ovarian tumor was made before the operation, as this has been repeatedly done by other operators in the case of solid tumors and cysts of the ligaments.

Neither does it matter that the right ovary was not recognized, as it is frequently melted down on the surface of large cysts, and becomes almost unrecognizable through pressure atrophy.

I conclude after all these considerations that this is a true primary leiomyoma of the broad ligament.

A table is appended to this article giving a synopsis of the eleven cases collected by Sanger (1 and 2) to which I have added six other cases. Three of these are from Freund (28), one is from Bantock, and one is from an unpublished case of Fenger, and the other is the case I have just described.

In only six cases was the true position of the tumor recognized before the operation, namely, Schmid's, Miculicz's, Freund's three cases, and Fenger's.

Cystic, cavernous, and sarcomatous myomas, as well as simple myomas, are represented.

The average age of the patients is about 32 years, the extreme being 19 and 42.

It is probable that these tumors are not so rare as this limited number would indicate, but that in the advanced stage of growth in which they come to operation, the ovary becomes drawn out and lost on the wall of the tumor, which then seems to have arisen from the lost ovary. An earlier examination would perhaps have revealed their true position.

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THE TREATMENT OF NERVOUS AND MENTAL DISEASE BY SYSTEMATIZED ACTIVE EXERCISE.

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(Concluded from page 167.)

Systematized active exercises serve a good purpose in some of the various disorders designated as asthma. One case of this kind, a young lady, despondent, weak, dyspeptic, hysterical, with feeble heart, and subject to attacks of asthmatic breathing, improved with great strides in a few weeks under general active exercises. She began treatment with half-pound dumb-bells, and at first could only stand five minutes' work. The exercises were increased, until half an hour was reached, and dumb-bells weighing four pounds were used.

In the treatment of chorea, or rather choreas, systematized active exercises are valuable. Special forms of gymnastics have been employed for this affection to some extent, particularly in France and Germany. Napoleon Laisné,¹ a French professor of gymnastics, and evidently an earnest and enthusiastic worker in his chosen field, under the directions of Dr. Blache and other physicians of Paris, has used gymnastics largely both for chorea and other convulsive disorders. In 1865 he published a book in which his methods are set forth. Both Schreiber and Dujardin-Beaumetz refer to his labors and successes. His method in mild cases, as described by Schreiber, is to place the child before him, steadying it between his knees, and then take its hands in his, and perform rhythmic movements with each arm, keeping time by counting, or, better still, singing, out loudly—"one," "two," "three," etc. The child, at the same time, is also urged to try and keep time with the movements, and not to make them irregularly.

"Care must be taken in the beginning to prevent, as much as possible, the coincidence of involuntary movements with the rhythmic ones. When the arms have been exercised, similar movements are undertaken with the legs. From time to time, a pause for rest is made, during which the limb must be held firmly enough to prevent the occurrence of involun-

¹ Applications de la Gymnastique à la guérison de quelques Maladies. Paris, 1865.

tary motions. The child is then laid on its back upon an inclined ladder, the feet being held by an assistant; then grasping a rung above its head, it holds on in that position as long as it is able. This is to be repeated several times, and to be followed by a short rest. Afterward, the shoulders, back, and legs are rubbed and gently kneaded."

Lengthy details of treatment will be found in Schreiber's Manual.

Two cases of minor chorea improved under medicinal treatment up to a certain point, and then would advance no further. General exercises with light dumb-bells were ordered, and in both cases the progress to complete recovery was rapid.

In the treatment of habit chorea, these exercises have a peculiar value. This, whether in children or adults, is an annoying and distressing disorder, and commonly intractable. By habit chorea is meant an abnormal movement or series of movements, voluntary or partially involuntary, and repeated at frequent intervals. Mitchell² records two interesting cases, and recommends for treatment careful and good diet, light gymnastics, no school, gentle aperients, and full doses of arsenic, particularly the hypodermic injection of arsenic in the form of Fowler's solution. I refer to this treatment, as he includes light gymnastics among the measures recommended.

Among my nervous patients I have had a goodly number of cases of habit chorea. Nearly thirteen years ago I reported the case of a girl, fifteen years old, who had peculiar movements of her right ear, after a time associated with twitchings of her nostrils and upper lip, and the limbs of the right side. Another patient, under excitement, made a movement of extension and semi-rotation with one arm, sometimes accompanying it with twitching of the facial muscles. Facial grimaces constitute, as is well known, one of the most common forms of habit chorea. I have now under my charge a case of habit chorea which is being treated successfully by systematized active exercises. The patient, a young lady eighteen years old, began to be troubled with spasmodic movements nine years ago. These lasted at first from one to two years, then disappeared for a year to return again, and have since gone and come several times. For the last two years, however, she has been troubled almost continuously with the movements, and has tried various modes of treatment, chiefly medicinal, but without any decided benefit. The chorea consists of a sudden jerking of the head downward and to one side, which may be performed once or several times in succession. Either with or without this twitch or jerk, she frequently also has a snapping movement of both eyes. The chorea was not started by imitation, but it is much influenced by any cause of nervous excitement, as fright.

Systematized gymnastics, either general or local, constitute a rational treatment for cases of this kind, because by means of such exercises not only is the general nutrition of the patient improved, but the nerve centres are given tone and strength, and good habits of movement are made to substitute bad.

Such eccentric and abnormal movements are the result of eccentric functioning by nerve centres, or of irregularities in the conveyance of impulses through nerve channels. By again and again causing normal impulses to be conveyed in a normal manner to muscles, in time the choreic habit will be overcome. Such treatment, however, needs to be persisted in for months.

The advantage of any treatment which involves specific direction and the adroit calling out of the volition of a patient must be evident to everyone who has had experience with hysteria in its manifold forms. In hysterical paralysis much can be done by laying out a careful plan of treatment by exercises, and gradually leading up to their full performance. In referring later to ataxias and palsies, functional and organic, methods to this end will be considered. For the improvement of nutrition, and of what may be termed the general nervous and mental tone of hysterical patients, systematized active exercises fill an important place. Properly used and controlled, they may also prove most beneficial for cases of general nervousness, and also for neurasthenia. Whatever view may be taken of the much mooted question of neurasthenia, without doubt both respiratory and muscular power, either primary or secondary, are often deficient, and the nerve centres themselves can be strengthened and improved by exercising these two powers. Care should be taken not to force individuals suffering in this way to excessive effort at first.

Great are the advantages which result from the sojourn by sea or mountain, from the cure of camp and ship; but the improvement of health obtained by such holiday treatment is often soon lost in whole or in part by the individual going back too completely to old habits of living and working. A resort to systematized active exercises for a few minutes daily will do much toward keeping the good that has been obtained.

"A man," says Maclaren, "cannot, in a week or two, eat sufficient food to supply the demands of the appetite for a whole year, neither can he take sufficient exercise to keep his body in health throughout the four seasons in a summer's ramble. These mountain excursions or sea-side sojourns must be *in addition to*, and involving no curtailment of, the daily walk to and from business, the daily ride to and from somewhere, or the daily employment with or at something; a something which will in its doing, quicken the pulse and augment the breathing, and, if possible, bring the perspiration to the forehead."

For those forms of nervous palpitation which are dependent upon a neurasthenic condition associated or not with digestive disorder, systematized active exercises are of great value. The exercise should at first be light, but should be carefully and somewhat rapidly increased. Besides the indoor exercises, after the method of Blaikie, or with the pulley-weight apparatus, the patient should use deep breathing while walking out of doors. A case reported by Dr. Theodore Clemens³, of Frankfort-on-the-Main, is interesting in this connection. The patient was a man forty-

² Lecture on Diseases of the Nervous System, Especially in Women, by S. Weir Mitchell, M.D., Philadelphia Medical Times, March 28, 1875.

³ Medical and Surgical Reporter, October 22, 1887.

six years old, who applied for treatment on account of distress and irregularity of the heart. Clemens decided to make him do the thing he most dreaded, viz., climb up several flights of stairs. The effect was most happy. The patient's pulse, which had intermitted at every tenth or twelfth beat, wavered only twice, and but slightly, in a hundred beats after he had mounted three flights of stairs twice. He now decided to make similar efforts regularly every day, and in three months he was a well man.

For the group of diseases which fall to the lot of both the neurologist and orthopaedist—cases of curvature, deformity, atrophy, etc.—systematized active exercises have long been used by the best authorities. I can only refer in this general way to this branch of the subject in the present paper. My more particular object is to call attention to the value of systematized respiratory exercises in setting up or straightening the feeble and stooped, who also frequently are sufferers, in some degree from nervous or mental weakness. If, at the same time, appropriate general hygiene is used, the improvement in such cases is sometimes simply wonderful. I have notes of a number of cases treated by Mr. Dodge and myself to bear witness to the truth of this statement, but time will not permit me to refer to these in detail. A gentleman, whose son had been using systematized active exercises, wrote to Mr. Dodge as follows:

"I have pleasure in assuring you that I think my son has wonderfully improved in health and appearance during the past month, while under your care. Even in two weeks we saw a marked change in him for the better—his stooping shoulders (made so by outgrowth of strength) straightening marvellously."

For gout and lithaemia, to promote excretion and nutrition; for anæmia and spæmia, to assist assimilation and further oxidation; for headache, sleeplessness, and nervous irritability, to soothe and calm the nervous system; to aid elimination in cases of lead, arsenic, mercurial, and other metallic or toxic diseases; for diabetes, to favor the skin and increase combustion, systematized active exercises have a value which cannot be too highly extolled, and one which I have had an opportunity to demonstrate in my own practice.

In curable ataxias, as in those which follow diphtheritic or exanthematous diseases, and in the hysterical varieties, systematized active movements, the patient at first lying down or sitting, and subsequently standing, have proved of great service in my hands.

In Dr. Mitchell's lectures,⁴ some valuable advice and interesting details are given with reference to the best method of slowly training by what are really systematized active movements, although not so called by him. The weak and inapt muscles are cautiously brought into use. The patient is first convinced, after she has made an effort which seems extreme, that another forth putting of will must add to the previous results. The nurse begins to train the patient while in bed, to move the legs one at a time very slowly, but in larger and larger move-

ments, with intervals between of a minute or more.

"An order is given to lift the leg; if it be too weak, a finger beneath the ankle aids it, but no attempt must be let to fail utterly; as she gets on the orders are to be obeyed more quickly. It is easy to sketch out for one's self what such a system should be in its details. After it has gone far enough the patient is seated in bed with some support to her spine, and is trained to move the head freely. The next step used with me to be a lesson in walking, but of late I find it better to teach the girl to creep, which is an easy and natural mode of training for the walk. The patient has pads tied over her knees, and, lying flat on her face on the floor, without skirts, has around her a folded sheet. At an order she tries to rise, helped by a lift of the sheet-belt by the nurse. When she is able to do this, and gather her legs and arms so as to make herself a quadruped, she is taught to balance herself, every effort being assisted, when needing help, by the nurse standing above her. The progress to creeping is easy; then comes the lesson of kneeling and pushing a chair; and last, that of standing in a corner or by a chair.

In the treatment of ataxic affections, even sometimes when dependent upon organic disease of the cerebro-spinal axis, the use of what may be called balancing or acrobatic gymnastics is of some value. Dr. Mortimer Granville, in the *Practitioner* for 1881, and subsequently in his monograph on "Nerve Vibration and Excitation," discusses a method for the regeneration of the nerve elements by exercise on the basis of the law of development through function, holding that the ataxic subject is reduced by dissolution to the position of a child just learning to stand or walk. His plan is to direct the patient to stand with his eyes closed in his bath, after pouring a small can of water down his spine, or applying a mustard poultice over the full length of the spine for ten minutes or a quarter of an hour, to persevere in an attempt to stand for, at first, a quarter of an hour, and, as his state improves, for half an hour every morning. He is to be furnished with a chair or rail at hand, to which he can cling in case of need, but is instructed to avoid using it except when in danger of falling. The exercise must be continued diligently for weeks before success can be obtained.

In patients suffering from multiple neuritis, or some curable forms of myelitis, advantage should be taken of the first signs of motor improvement to begin with active exercises, while the use of electricity and massage is continued. The particular point upon which I desire to insist is, that the attempt to join the will of the patient to the long unused muscles shall not be deferred a moment longer than is necessary. Simple attention to this truth, which ought to be self evident, would, I think, in many cases have saved patients from weeks or months of uselessness.

In the treatment of various forms of paralysis that systematized active movements may be employed with advantage has long been known. Even in paralysis from organic brain disease, a clear

⁴ Op. cit.

method of using gymnastic treatment will be found to serve an excellent purpose. Such paralysis is usually the result of hemorrhage, embolism, thrombosis, tumor, abscess, or depressed fracture; less frequently of meningitis or cerebritis, of atrophy or arrested development, and still more rarely of uræmia. Sometimes in cases of sudden lesion, as hemorrhage or embolism, the assault upon the nervous system is so violent, or the destruction is so great that death results quickly, or the patient is reduced to a state of utter helplessness, for which, practically, nothing can be done. In many cases, however, soon after the attack, or even at a later period, the amount of palsy is disproportionate to the cerebral lesion by which it has been initiated. Many cases of monoplegia and hemiplegia illustrates this truth. Little by little some of these patients regain muscular power to such an extent as almost to induce the belief that they will get entirely well; indeed, in some cases of hemorrhage, tumor, traumatism, syphilitic meningitis, and uræmia, complete or almost complete recovery does occur. We should, therefore not disregard entirely the treatment of such patients.

The course of treatment usually pursued in these cases, in the main wise, is, at first, to do little more than protect the patient from disturbing influences; and after the shock of the attack, and the acute inflammation which sometimes accompanies or follows it, have subsided—that is in a few weeks or months—to give absorbents and alteratives, and to apply electricity, and possibly massage, allowing the patient to use the affected limb as he sees fit. More than this, however, should be done; and it is just here that single active exercises, after some thorough system, may play a useful part. Every effort consistent with safety, should be made to unite again the paralyzed limb with the volitional centres. Such patients often need to be incited to effort.

Two methods of systematized active exercises may be tried for these hemiplegias and monoplegias. One is the method partly of duplicated active, and partly of single active movements, used and described by some of the writers on Swedish movements; as, for instance, by the Taylors. The patient is placed in a recumbent or half-reclining posture, so that he may be able to direct all the cerebral energy at his command toward the paralyzed member, and is then urged to make some simple movement. If he succeeds to ever so slight a degree, he should simply be encouraged to repeat the movement, but he should be carefully guarded against undue or too long prolonged effort. Other simple movements are added from time to time. If he can do absolutely nothing, the operator should perform on the patient the desired movement, while the latter fixes his attention upon the performance and tries to assist. When a little headway has been made, systematized active movements should be used in conjunction with electricity, massage, and duplicated active movements in an orderly and thoroughly regulated manner. With light dumb-bells and with the pulley-weight apparatus, all possible movements, and particularly those which are

most wanting, should be cautiously encouraged. From a cautious pursuance of such methods I have seen a surprising result in a number of cases supposed to have reached the limit of improvement.

Such treatment does good, not only because the original lesion may have been partially removed, but also because, by such efforts portions of the brain adjoining the centres destroyed may be made to take on new function; or possibly in some instances, the other hemisphere of the brain may be called into new activity. To central spinal palsies, as well as to paralysis from brain disease, in a large measure the same truths apply.

Another method of gymnastic treatment which I have often employed with benefit in cases of monoplegia and hemiplegia, is to cause the patient, first, to make a movement upon the unaffected side, and then instantly to perform the same movement with the paralyzed member, following this quickly with an attempt to do the same thing with both limbs. It is surprising the curious results that will be sometimes obtained in this way, if the leg is but little affected, and the patient can stand while these movements are performed by the upper extremities. To exercise the legs, the patient, of course, should be placed in an easy position, and one that will allow the movements to be performed with the greatest convenience. Exercises of this kind probably have some effect in bringing the paralysed side of the body under control of the uninjured side of the brain through commissural channels in the spinal cord.

For some of the arthritic neuroses, and for rheumatic neuritis, or muscular rheumatism, these exercises are of undoubted value. I have seen three cases of a form of rheumatic neuritis affecting the deltoid and adjoining muscles, in which the progress to complete recovery was much assisted by an early resort to dumb-bell exercises and pulley-weights. Cases of this kind are best treated by using large doses of oil of gaultheria, or sodium salicylate, with hypodermic injections of morphia in the most acute stage; a little later resorting to massage, electricity, or both; and then to exercise with light dumb-bells or pulley-weights. Here, again, the point I wish to impress is, that such active exercises should not be deferred too long.

Hysterical aphonia or apsythria (loss of the power of whispering) can sometimes be treated successfully by a species of respiratory gymnastics, or a combination of respiratory with vocal and muscular gymnastics. Dr. Mitchell has described a method of bringing back the voice, which is really a form of respiratory gymnastics, a method which I have used several times with success, and less frequently with failure. Speaking of a woman who had good power over the laryngeal muscles, but could neither speak nor whisper, he concluded that if he could teach her to speak only with a very full chest, he might secure an involuntary success. Asking her to fill her lungs several times, and when very full to keep her mouth wide open, he then had her try to sound the broad A, at the same time breathing out violently. She made a clear, audible sound, and was at once on the

high road to cure. Some years ago, with this simple method, I obtained a brilliant success with a young lady who had not spoken even in a whisper for many months. I now combine light dumb-bell and pulley-weight chest exercises with this method.

In certain cases the treatment by rest, seclusion, etc., can be successfully combined with that by systematized exercises. After the nervous or broken-down patients suitable for the treatment have progressed to a certain point; after their nutrition has been placed upon a firm basis, respiratory exercises without apparatus, or with very light dumb-bells, can be carefully begun. Five minutes, or perhaps only three minutes, should be taken at first, and the time should be increased with the utmost caution. In a recent neurasthenic case with hystero-epileptic seizures, after the patient had improved under the rest treatment, systematized active exercises were resorted to with the greatest benefit. In those cases of hystero-epilepsy in which the seizures are partially voluntary, or of the induced voluntary kind, the use of such exercises assist the patient in obtaining the control of herself, and the movements which enables her to resist the beginning of the attacks.

Dr. C. F. Taylor, in the book to which I have already referred, has hit the secret of the combination of rest and exercise in certain cases.

"The true remedy," he says, "is rest and exercise. Let the rest be complete relaxation of all muscular effort—not the entertaining of company, sitting bolt upright, so that the spinal muscles must be constantly acting, or reclining in a 'graceful' attitude on a lounge, with book in hand, but a completely sustained position, when all the muscles must cease to act. Then the exercises to follow should be short, varied, and taken with some vigor."

The now generally accepted views with reference to cerebral localization throw some light upon the manner in which systematized active exercises, or other forms of gymnastic treatment, improve or repair the nervous system, and especially the brain. This fact has not been overlooked by authorities in neurology and gymnastics, as by Emil Du Bois-Reymond, Schreiber, Crichton-Brown, and others. In the brain are represented both a differentiation and an integration or solidarity of function. Centres for speech, for vocalization, for particular movements, for the special senses, for the muscular sense for organic sensations, for some of the higher faculties, as of attention and inhibition, are now, with reason, claimed to have been isolated. For the localization of some of these, as of speech, motor, and some of the sensory centres, the facts and arguments are practically incontrovertible. In the plainest of terms, if brain centres which determine certain movements exist, the performance of these movements must develop and train not only the muscles concerned in these actions, but the cerebral centres with which they are connected.

DR. AUVARD has been made Editor of the *Archives de Toxicologie*, the well-known obstetrical and gynecological journal, published by Delahaye and Lecrosnier, of Paris.

ICHTHYOL IN SURGERY.

*Read before the Philadelphia County Medical Society,
January 25, 1883.*

BY EDWARD MARTIN, M.D.,

OF PHILADELPHIA.

Ichthyol was first described by Schrötter, and used in the treatment of skin diseases by Unna. It is obtained as a clear yellow-brown oil by distilling a certain bituminous matter found in Tyrol, and containing the fossilized remains of fishes and marine animals. By the action of sulphuric acid on this distillate, and subsequent neutralization with soda or ammonia, either the sodium or ammonium sulphichthyolate is produced. The latter compound is preferred by Unna.

The ammonium sulphichthyolate is reddish-brown, clear, syrup-like liquid of burning taste and odor, soluble in water, making a clear, red-brown solution; also soluble in equal parts of alcohol and ether.

The ichthyol preparations are characterized chemically by their richness in sulphur (10 per cent.), so intimately united that it can only be extracted by complete decomposition (Lartigueau); they easily take up oxygen, acting as powerful reducing agents (Baumann).

Clinically, the ichthyolates are described by Unna as being powerful antiphlogistics, causing anæmia and rapid subsidence of swelling in all tissues. This antiphlogistic effect is ascribed to the drug's action on the endothelium of the bloodvessels depriving it of oxygen in virtue of its reducing properties, and contracting the lumen of the vessels. This explanation is not, perhaps, entirely satisfactory, but physiological studies have not yet given us a better one. The cornifying effect of the drug on the epithelium of the rete is undoubted.

Surgically, what are the indications of the drug? Lartigueau states that it is indicated in all subcutaneous and inflammatory tumefactions, œdemas, vascular dilatations, incipient furuncles, and local manifestations of rheumatism.

Elliot praises it highly in burns of the first and second degree (5 per cent. solutions in water) as producing rapid subsidence of pain and inflammatory symptoms. He finds its application to obstinate varicose ulcers associated with eczema rubrum (sodium compounds, 3 to 5 per cent.) at times productive of marvellous results. In his hands it is also useful in cicatrices, and in a few cases of rheumatism and neuralgia has given immediate and marked relief from pain.

Schweninger states that in rheumatism, lumbago, ischias, tic, gout, and migraine, local applications of ichthyol act more powerfully in allaying the pain than any known medication.

Lorenz is astonished at the fabulous efficacy of the drug. In acute and chronic joint rheumatism, acute muscular rheumatism, mastitis, paronychia, and contusions, a few rubbings with pure or 50 per cent. ichthyol compounds are peculiarly successful in allaying pain and hastening healing. In chronic and acute joint rheumatism relief often follows a single rubbing, while this is the rule in acute muscular rheumatism.

The pain of gout disappears, the shining red skin becoming quickly wrinkled. A beginning mastitis or panarititis is always aborted, or if fully developed the pain is much relieved. Its prompt use prevents the discoloration following contusions. It immediately allays the pain of a burn, and prevents blistering. Finally, a 10 per cent. solution hastens the cicatrization of badly healing ulcers.

Loring dilutes with water when the pure ichthylol compound cannot be borne and prevents irritation of the skin by careful washing and drying before each application.

Von Nussbaum states that a single application of ichthylol 1 part, water 4 parts, lanolin 5 parts, has allayed the itching of eczematous ulcers which had resisted all known applications for weeks and months, and promptly brought about rapid cicatrization on being continued a few days. Arthritic pains, which for weeks have made day and night miserable, are relieved at times in one-half minute after the application of a strong ichthylol ointment. In erysipelas it produces results obtainable by no other means, namely, the immediate arrest of the disease. Von Nussbaum's treatment was first the thorough disinfection and drainage of the wound, then, if the disease continued to extend, over its whole surface a thick layer of ichthylolate and vaseline, equal parts, was spread and covered by a layer of 10 per cent. salicylated cotton. The erysipelas advanced not a line further and in a single day the swelling disappeared and the red, shining, puffy surface became yellow, brown, and wrinkled. This remarkable effect von Nussbaum ascribes not to the influence of the drug as Fehleisen's cocci, but rather to a change produced in the tissues by virtue of which they cease to favor the growth of the microorganisms.

Stelwagen has had excellent results in the abortion of furuncles by ichthylol preparations.

Agnew (D. Hayes) considers the ichthylol preparations more powerful than any known therapeutical agent in bringing about reduction of inflammatory enlargements, and has had particularly good results in recently enlarged lymphatics. He uses sulphichthylolate of ammonia and iodide of lead, equal parts, applied generously and covered in by oiled silk.

The writer has used ichthylol in—

1. Six cases of cervical adenitis, with absolutely no relief; cure being subsequently brought about by iodine or the knife.

2. Fifteen cases of marked inflammatory induration of the subcutaneous tissue, with invariably a speedy and in some cases almost a magical reduction, and this after other means had been tried unsuccessfully.

3. In two cases of furuncles without good effect.

4. In one case of cellulitis without marked effect till the knife was used (in this case staphylococci were found but no chains).

5. In four cases where pain was the most marked feature of inflammation, with complete relief in three and no effect in the fourth.

6. In one case of erysipelas of the scalp, with immediate cure.

The latter is so striking that it is reported in full:

B. C., bartender, æt. 36; full-blooded Irishman. Struck on the head by a bottle whilst intoxicated, December 20, 1887. Two slight wounds of the scalp, to which no dressing was applied. 22d. Chill, fever, nausea, great pain in the head, and swelling. Went to a clinic; wounds were opened, disinfected, and catgut drainings provided; symptoms progressive. He was seen by the writer on the second day of his fever, the fourth from the infliction of the wound. No sleep for two nights. Pulse 106; temp. 103°. Violent headache; whole scalp puffy, cedematous, and very tender; a few drops of thin pus squeezed from wounds. Cover-glass preparations of blood from puncture by tenotome showed Fehleisen's chains. A saline purge and iron were ordered internally. On the scalp was placed a thick layer of ammonium ichthylolate and vaseline, equal parts. The pain was relieved almost immediately; the patient slept comfortably; his temperature the following morning was 98°, and he was and remained well.

This is not different from the results obtained by Nussbaum.

With the exception of the case of erysipelas, the writer used a 10 per cent ointment of ammonium ichthylolate in lanolin, fearing lest, in the case of stronger applications, his effects might be ascribed to counter-irritation. It is possible that stronger preparations would have proven efficacious in the treatment of adenitis in which the weak ointment failed.

The extravagant praises bestowed by some authors on ichthylol savor more of proprietary advertisements than scientific contributions, and the variety of affections for which it is recommended might well make one doubtful as to its complete efficacy in any single instance.

An analysis of the cases in which it has proven serviceable will show, however, that they can be relegated to one of two classes:

1. Affections characterized by inflammatory enlargement.

2. Affections characterized by pain of peripheral origin, probably depending on inflammation or congestion.

For either of these conditions, theoretically, a powerful antiphlogistic would be indicated, so that the clinical indications for the use of the drug correspond to its alleged therapeutic effect.

When the surface is irritated, weak solutions (3 to 5 per cent.) should be used; but when the skin is intact and the subcutaneous tissues are to be affected, pure or one-half strength ointments give the best results. In using strong preparations the skin should be washed with warm water and soap, and thoroughly dried before each application. Ichthylolates can be combined with any of the ointments, or can be dissolved in water.

The writer's success with the drug, even where it was not used in the most efficient manner, has convinced him that the praise bestowed on it by the Germans is well merited. Where suppuration has actually taken place the weak ointment is not of service, but in the allaying of inflammatory pain and the resolution of subcutaneous induration (excepting adenitis) the results are most satisfactory.

SOME INTERESTING SEQUELÆ OF A CASE OF SCARLET FEVER.

Read before the Philadelphia County Medical Society, on January 25, 1888.

BY A. J. DOWNES, M.D.,
OF PHILADELPHIA, PA.

On November 15, 1887, at 3 P.M., I was asked to see B. M., a boy of 7 years, then under the care of a homeopath, and said to be dying of heart disease. I called immediately. The boy was comatose, had been so for twelve hours. The face had a characteristic pallor, the eye-lids were slightly puffy, the pupils dilated, the breathing stertorous.

I listened to the heart and heard a loud systolic apex murmur, a diastolic one at the right base, and mingling with both a peculiar whistling sound, the cause of which at the time I did not understand. Examining further, I found that the eyelids had become puffy two days previous, that the feet and ankles were now swollen, and the scrotum slightly so. No urine had passed in twenty-four hours. Excepting a few scybala, forty-eight hours before, the bowels had not moved in seventy-two hours.

The child had scarlet fever five years before. I told the father that the boy did have heart disease, but that he was dying of uræmia. Shortly after 5 P.M. the boy was dead. The following morning Dr. Martin Rively and myself made a post-mortem examination. The specimens I show are the heart, kidneys and a piece of the liver.

So advanced cardiac lesions in a child of this age are far from common. The ventricles are both hypertrophied and the cavities dilated, the right considerably. The curtains of the mitral valve are thickened and fibrous, the posterior leaflet is exceedingly contracted and shows above it a recent inflammatory area. The aortic curtains are a beautiful picture of an insufficient valve. The whistling sound I heard during life must have come from the tricuspid valve. The hypertrophy of the muscular elements of the ventricle, with the marked distention to which the cavity was subjected, surely allowed sufficient leakage to cause this sound.

On account of its so late recognition and its undoubted influence in enhancing the cardiac condition the state of the kidneys is exceedingly interesting. Even microscopically the kidneys show changes which must have been going on for some time. The pale cortex and the eversion of the cut edges indicate fat. Under the microscope we find evidence of long existing changes, sufficient to warrant the assumption that in the long-ago attack of scarlet fever the kidney changes began. The tubules are swollen, distorted, and full of casts. The epithelial cells lining them are somewhat granular and smaller than normal with their nuclei becoming indistinct. Long existing changes therefore. We find also recent conditions.

The glomerules are swollen and congested and in their vicinity an infiltration of small indifferent cells. A very characteristic glomerulo-nephritis of recent date. The cause in this case of anuria and consequent uræmia. And the history points to this: for

the boy, although not well for a few years back, was comparatively so. For two weeks previous to his death he was confined to his bed, and undoubtedly during this time he was suffering from a glomerulo-nephritis which, adding itself to an already damaged kidney, precipitated an attack of uræmia.

Additional proof that the boy's kidneys were not normal prior to his last sickness is not wanting. His bladder, post-mortem, contained about two ounces—twenty-four hours' urine—of this I collected one ounce. It contained a large amount of albumen but no sugar, round and columnar epithelial cells showing fatty degeneration, a few epithelial casts containing oil globules and some free oil. A few weeks nephritis could not cause this urine.

The liver changes are secondary to the heart condition. Under this microscope it shows both fatty infiltration and degeneration.

In concluding, I would recall the points that interested me in the case. *First.* The extensive cardiac lesions caused by scarlet fever, occurring in a child under 2 years. *Second.* The late recognition of the heart, the non-recognition of the kidney condition. *Third.* The occurrence of acute inflammation—the glomerulo-nephritis almost typical of scarlet fever—in an already damaged kidney. *Finally.* May I not call attention to this case as showing to what extent the sequelæ of scarlet fever may advance when not recognized and treated. And the history of the case proves such to be the fact. Eight homeopaths in succession had charge of the boy for four years prior to his death. Over a year ago one had diagnosed diabetes. The one in attendance before my visits had recognized valvular affection. But the kidney lesions had escaped them all. Apparently this proves that the case ran an almost natural course.

ABSCESS OF THE CEREBELLUM CAUSED BY DISEASE OF THE EAR.

BY THOMAS C. SMITH, M.D.,
OF WASHINGTON, D. C.

Disease of the brain caused by the neglect of middle-ear affections, is by no means uncommon, and the case to be reported is another instance of the fallacy of supposing that a chronic otorrhœa is best treated by being let alone.

On August 29, 1887, I was asked to see M. W., colored, æt. 15 years. When an infant she had an attack of measles, following which came a discharge from the ear and almost complete loss of hearing. She was always sick. Headache was a frequent affair, and at the time of my visit she was experiencing an unusually severe attack. There was some fever; constipation; loss of appetite; rather slow pulse. Bromide of potassium was given for the headache, and the bowels were moved by suitable means. At my next visit I learned that the girl had had convulsions after my visit, and had passed a sleepless night. I now examined the ears and found the left meatus filled with pus. Her mother informed me that she had suffered from the ear disease, with dis-

charge, ever since the attack of measles, as already mentioned. At times the discharge of pus would cease for a while but her symptoms did not seem to be modified thereby. She did not think anything could be done for the ear disease, consequently, nothing had been done. The mother was given to understand that the headache and convulsions were due to the ear disease and an unfavorable prognosis was given. The ear was syringed and an astringent used to try to influence the diseased middle-ear tissues. Chloral at night secured sleep, and after a week my visits were discontinued. On September 14, the girl came to my office with her mother, and the ear was examined. The purulent discharge was not quite so free, but the meatus was so much obstructed by granulation-tissue that it was impossible to get a view of the deep portion of that tube. The general condition of the girl was so bad that I did not think any treatment would avail much. Still, she was ordered tonics and good nourishment, and the ear was to be cleansed with astringent and antiseptic remedies. I did not see her again until the 12th of the present month. She was in bed suffering from headache. On the 14th she was easier, but she was disposed to be drowsy. On the 15th coma existed and she died about the middle of the day. The diagnosis of intracranial abscess had been made. No paralytic symptoms existed at any time.

The case is interesting from a surgical point of view. Brain surgery is making such great advances, that the time may come when all intracranial abscesses and tumors will be subjected to the same treatment as when they occur in other locations. In view of the fact that the existence of abscess was so clearly established in this case, the question arises, Why was not the skull trephined and the abscess sought out and opened? In the light of the symptoms presented, I answer the question by asking another. Where would the surgeon have applied his trephine? And with the post-mortem evidence before us, I ask whether an operation would have been beneficial even supposing the abscess to have been correctly located before the patient was *in extremis*?

The autopsy was made by Dr. Lamb, and I append his notes:

"Necropsy.—Head alone examined. Left meatus auditorius externus occupied by thick, purulent matter of dark, rather bloody hue. Dura mater normal, except on posterior surface of petrous portion of left temporal bone, where the adhesion was a little greater than normal around an opening in the bone; this opening was one-quarter of an inch in diameter and communicated with the tympanic cavity; this cavity, again, was enlarged by progressive excavation of the bone, into a chamber an inch in length, and of corresponding breadth and height. Cerebrum normal. Left hemisphere of cerebellum, anterior half converted into an abscess."

MEDICAL PROGRESS.

THE TELEPHONIC BULLET-PROBE.—At the meeting of the Surgical Section of the New York Academy of Medicine on January 9, Dr. J. H. GIRDNER read a paper on this subject. In the past year he has perfected the instrument that he described a year ago, and now operates it by a current of electricity extracted from the body of the patient himself. This instrument, as now arranged, leaves both hands of the operator free, and shuts out all sound except that heard when the bullet is touched. Dr. Gardner reports the following case:

A musket-ball had lain between the tibia and fibula for twenty-two years. A long, narrow, tortuous sinus had been discharging for a year. When an ordinary probe was passed, hard substances could be felt in many places; but you could not tell if bone or bullet was being probed. The porcelain-probe could not have been marked by the lead owing to thick crusts of salts of lead with which the ball was covered, even if it could have been brought into contact with the bullet, which it could not, owing to narrow places in the sinus. Bone and other tissue were felt as the probe passed to different parts of the wound, but no response was heard in the telephone until the leaden bullet was touched, then an electric current passed through the telephone; and as often as this current was made and broken, by touching and removing the probe from the lead, so often was there a vibration of the diaphragm, and consequently a clicking and scraping sound heard in the telephone; in other words, the patient's body was converted into an electric battery; the body corresponded to the cups, its fluids and heat to the battery fluid, the steel bulb immersed in the mouth to the zinc, let us say, and the lead when it was touched, to the carbon, and thus our battery was completed, a current obtained, and the metal diaphragm made to vibrate.

The advantages of this instrument over all others at once appear, when it is remembered, that in its use the accurate sense of hearing is substituted for that of the sensation communicated to the hand, which is always unreliable, for no one can tell if a hard substance felt in a wound be bone, metal, or some other hard tissue. The porcelain-tipped probe was made with the hope of overcoming this difficulty; but after ample experience with the Nélaton probe, both in my own hands and in those of others in my presence, I am certain that, unless the bullet is perfectly clean from grease, lead salts, etc., and very favorably situated, it is not possible to obtain lead markings on the porcelain tip which can be relied upon to direct our operative procedure. Let any one hold a bullet in the hand, and probe it with a Nélaton probe until the markings of the lead on the porcelain point are perfectly distinct, and he will find that it requires an amount of force and pressure in rubbing the lead which he will rarely be able to make, even in the most favorable cases of gunshot-wound. None of the above conditions, which make the Nélaton probe useless, in any way interfere with the perfect working of this new probe, for the slightest touch of the bullet

KASCHAN HOSPITAL.—A few years ago three Russian female physicians founded a hospital at Kaschan, Persia, for Mussulman women. The experiment has met with great success, and in the last twelve months 15,000 patients have been treated.

with the probe causes a loud and unmistakable sound in the telephone. Another great advantage is, that a sharp, slender, steel needle may take the place of the blunt probe, and then no tract is necessary in probing; the needle, rendered aseptic, may be thrust into the tissues like a hypodermic needle, with little pain, and no danger to the patient, as has been verified in actual practice, and when the bullet is struck, you have only to loosen the clamp-screw and remove the handle, allowing the needle to remain fast in the tissues, with its point still in contact with the missile, and it serves as a perfect guide in cutting down on the bullet.—*Medical Record*, Feb. 4, 1888.

SALT IN MILK FOR CHILDREN.—DR. JACOB says that the physiological effect of chloride of sodium is very important, no matter whether it is directly introduced through the mother's milk, or added as a condiment to cow's milk, or vegetable diet. Both of the latter contain more potassium than sodium, and neither ought ever to be given, to the well or sick, without the addition of table salt. A portion of that which is introduced may be absorbed in solution; another part is, however, broken up into another sodium salt and hydrochloric acid. Thus it serves directly as an excitant to the secretion of the glands and facilitates digestion. Therefore during diseases in which the secretion of gastric juice is interfered with, or in the beginning of convalescence, when both the secreting faculties and the muscular power of the stomach are wanting, and the necessity of resorting to nitrogenous food is apparent, an ample supply of salt ought to be furnished. The excess of acid which may get into the intestinal canal unites with the sodium of the bile in the duodenum, and assists in producing a second combination of chloride of sodium, which again is dissolved in the intestines and absorbed. Its action in the circulation is well understood: it enhances the vital processes, mainly by accelerating tissue-changes through the elimination of more urea and carbonic acid.

A very important fact is also this; that the addition of chloride of sodium prevents the solid coagulation of milk by either rennet or gastric juice. The cow's milk ought never to be given without table salt, and the latter ought to be added to women's milk when it behaves like cow's milk in regard to solid curdling and consequent indigestibility.

Habitual constipation of children is also influenced beneficially, for two reasons: not only is the food made more digestible, but the secretions of the alimentary canal, both serous and glandular, are made more effective by its presence.—*Archives of Pediatrics*, January, 1888.

TRIBROMPHENOL, AN ANTISEPTIC.—GRINEM reports his experience with this substance as follows: It is a combination of bromine with phenol, and is a white crystalline powder, very insoluble in water, easily soluble in alcohol, ether, chloroform, and other similar liquids. It is dissolved but little by glycerine, carbolic solutions, and dilute spirits of wine. It is dissolved by the intestinal secretions,

combines with sulphuric acid, and appears in the urine as a sulphuric compound. It is not escharotic, but powerfully stimulant to granulations; it does not attack the unbroken skin.

It was used in gauze dipped in 2½ per cent. solution, with good results, in tamponing wounds and cavities; it is well adapted as a stimulating tampon for abscess cavities, but should not be used in the pharynx, mouth, or nares.

In experiments upon bacterial cultures a 1 per cent. solution sterilized septic matter in thirty minutes; in 3 to 1000 solution it sterilized gelatine cultures. A small quantity added to urine prevented decomposition. The writer gave this substance in three doses of 1½ grains each, to a patient suffering from tenia, with good results; the whole was given within an hour and a half. Personally, he took as much as 15 grains in twenty-four hours; the only effect being a slightly uncomfortable feeling in the abdomen, and an unpleasant taste.

The use of this substance seems indicated to stimulate granulations; and, by virtue of its insolubility in acids and its solution in alkalies, as an intestinal antiseptic.—*Deutsche medicinische Wochenschrift*, Dec. 29, 1887.

SULPHIDE OF CARBON IN ELEPHANTIASIS.—DR. P. D. ANTHONISZ, of Ceylon, gives the results of the use of sulphide of carbon in elephantiasis, both acute and chronic, as tried by himself and a few of his medical friends. In some of the acute cases, the reduction of swelling was prompt and complete, in others it was gradual but satisfactory. In one, a case of thirty years' standing, a year's treatment, begun when the legs were as large as the man's waist, left them about the size of his thighs. The dose mentioned in the latter was two 2-grain pills per diem, to be continued for a lengthened period, except when the drug irritates the stomach, as it will do from time to time. When the ill effects have passed, the medicine should be renewed. The writer adopts the theory proposed by Dr. Manson, of Amoy, some years ago, that the disease is due to the presence, in the blood, of the *filaria sanguinis hominis*. He believes that the remedy is efficient by reason of its sulphur ingredient and its power to prevent the parasite from multiplying in the body; which, according to Dr. Manson, it does with amazing rapidity. It will be remembered, that in accounting for the presence of the filaria in the blood, the theory of Dr. Manson included the novel proposition that the mosquito might carry in the parasite with his proboscis, and deposit it in tissues whence access to the blood could readily be obtained.—*British Medical Journal*, Dec. 24, 1887.

GALVANIZATION OF THE THYROID IN EPILEPSY.—SIGHICELLI, having noticed that thyroidectomy produced convulsions of an epileptiform nature in animals, has used galvanism of the thyroid in the treatment of epilepsy. Of 7 cases that he reports, in 2 there was an evident diminution of the epileptic access. A third case was completely cured; that is, the cure has lasted for several months.—*L'Electrothérapie*, January, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, FEBRUARY 18, 1888.

XERODERMA PIGMENTOSUM.

At the first meeting of the New York Academy of Medicine in February, DR. R. W. TAYLOR read a paper on this subject, on which he is the recognized authority in this country. The paper was based on the results of his observation and study for fifteen years, and was devoted more particularly to a consideration of the malignant neoplasms to the formation of which the disease tends in its early stages. They that are familiar with the literature of this subject know that the disease is peculiar to childhood, that it is multiform in its clinical characteristics, and indelible in its disfigurements, and that it was first described by Hebra and Kaposi in 1870. According to Dr. Taylor there are now 39 cases on record. The first cases reported in this country were the 7 reported by Dr. Taylor in 1877, and further described in 1878 (*Vid. Trans. American Dermatological Association*). Three of the cases occurred in one family, and two in another family closely related to the first. With one exception all the cases were in girls. The boy that had the disease was attacked with mumps when about 7 years old. Resulting from this attack was an abscess that had to be opened; the wound thus made never healed, but extensive ulceration followed, which finally involved the coats of an artery, and thus caused uncontrollable hemorrhage, from which the boy died. Another child died of marasmus, and a third was accidentally drowned.

In the 7 cases reported by Dr. Taylor all the clinical features of the disease were portrayed. The affection consists essentially of telangiectasis, pigmentations and atrophic changes, to which are super-

added certain polymorphous neoplasms that are primarily benign, but that are likely to degenerate into malignant tumors. The disease seems to be one of early childhood, and in most of Dr. Taylor's cases it began at about the age of 7 months; in one case only did it begin so late as the 14th month. Of the characteristics of the disease the prodromal erythema is to be emphasized; its usual seat is on the face, under the eyes, it may be easily mistaken for sun-burn. This hyperæmia lasts from one to three months, and as it gradually disappears the pigment spots begin to appear. These affect the face and exposed parts of the neck and extremities, after extending as low as the third rib on the chest, and up to the elbows on the arms. Their size varies from that of a pin-head to a lentil, resembling ordinary freckles, and not elevated much above the surface. Among these are the red or telangiectatic spots, in which capillary vessels can be seen with a strong glass. The prodromal erythema is not so marked on the hands as on the face, there are no marked local or subjective symptoms, such as burning or itching, and the general health remains good. The lesions are always characterized by alternating exacerbations and periods of inactivity, so that the course of the disease is more or less erratic.

The period of the pigment-spots and telangiectases is chiefly that of early childhood, and these two orders of lesions are peculiar to the stage of hypertrophy. The atrophic changes usually appear at the end of the first year. The atrophy is not symmetrical, as a rule, and varies greatly in extent and intensity in different subjects; while it is not commonly so well-marked on the extremities as on the face. This atrophy of the skin develops in accordance with the atrophy of the blood-vessels of the telangiectatic spots. It is especially apt to affect the eyes, nose and mouth; causing ectopion, with its attendant evils, and deformity of the nasal and oral cavities. Very often hypertrophic changes are taking place at the same time as the atrophic. The face presents a mottled appearance and, in addition to the freckles and red spots, there are white patches varying from .625 cm. to 2.5 cm in diameter. The skin is inelastic and like parchment, or seems as if it is coated with inflexible collodion. The appearance not infrequently resembles the cicatrix of an extensive but superficial burn. There is an almost total absence of the normal secretions, and the countenance often has a peculiar immobility of expression. In some cases, however, the atrophy is much less marked than in others, and it is always less prominent upon the hands than on the face. This atrophic condition, in

general, is not unlike that met with in senile atrophy of the skin.

While the atrophic changes are to be dreaded, on account of their liability to result in hideous deformity, the keratotic or warty patches that eventually grow from some of the pigment-spots are liable to degenerate into malignant growths. In 3 of Dr. Taylor's 7 cases epitheliomata were found, and the statistics of all the cases recorded seem to show that in this disease the greatest malignity is exhibited under the age of 10 years; nearly as great between the ages of 10, and 20 and after that there is a diminished tendency to malignity. It is certainly a singular fact that epithelioma should develop in such young subjects.

In regard to treatment, Dr. Taylor says that intelligent medication, extending over several years, has hitherto always proved quite ineffectual, and no case of the disease has ever been cured. In the treatment measures should be taken to keep the skin at rest and free from all sources of irritation, and all pigmentation warts should be removed as soon as possible with the spoon. All larger tumors should also be extirpated, and the subjacent tissues thoroughly scraped, if necessary to the bone or periosteum.

According to some authorities most, and to Cohnheim, all malignant tumors, occurring at any time of life, are the result of embryonic cells not undergoing their accustomed changes, and remaining behind in normally developed tissue; and if this view be accepted, it will sufficiently explain the appearance of these malignant growths in early childhood, as was remarked by Dr. Jacobi. Furthermore, the fact that the blood-vessels are largely increased is no doubt the result of the embryonic tissue remaining; and these blood-vessels are not in a normal condition. Dr. Jacobi thinks it probable that the occurrence of spontaneous thrombosis may explain the disappearance of the red spots and other phenomena in the disease. It seems, then, as if there is an arrest of the metamorphosis of embryonic tissue, and if this be the case, Dr. Jacobi suggests that in the treatment it may do good to increase the quantity of normal connective tissue, if possible, and thus fortify the parts against the further development of abnormal growths. For this purpose, provided the supposition be correct, there are two remedies that suggest themselves as being specially indicated: first, arsenic; and second—and better still—phosphorus. By the irritation excited by suitable doses of these agents it seems possible to cause a good solid, normal nutrition in the connective tissues. Phosphorus favorably influences the normal growth of bone, and for some

years Dr. Jacobi has used it with satisfactory results in caries and other bone diseases, finding it of special service in cranial rachitis. The phosphates and other compounds are of no value; phosphorus itself must be used. It may be given in oil or emulsion, in doses of .01 grain twice a day, and it must be used for a long time.

Dr. Jacobi's suggestions are valuable and practical, and it would be well if some one were to institute a systematic course of medicinal treatment in accordance with them in future cases. At the same time, surgical measures are of decided benefit in controlling some of the more serious results of the disease; and, contrary to what might perhaps be expected, as a rule the tissues heal well after the removal of the new growths.

THE NEXT MEETING OF THE ASSOCIATION.

This year will witness a change in the programme of the general meetings that has been necessitated by the constantly increasing number of Sections into which the Association has been divided. Heretofore the Chairmen of Sections have read addresses before the general meetings, but according to the rule adopted at the last meeting, these addresses will in the future be read before the Sections. At the general meeting the President's Address will be listened to on the first day, and for each succeeding day a single address will be delivered by members of the profession especially selected for this purpose.

The selections made this year will surely meet with universal approval. Professor Roberts Bartholow will address the Association on the second day. The special topic of his address will be, "How Therapeutics may be made an Exact Science—Illustrated by Examples." On the third day, Dr. E. M. Moore, of Rochester, will deliver an address on Surgery; and on the fourth day Dr. H. P. Walcott, of Boston, will deliver a general address on State Medicine.

We give in another department a programme of the general meetings of the next session of the Association.

FEMALE PHARMACISTS IN ITALY.

The Minister of the Interior, of Italy, having had his attention called to the fact that about 3,500 places in the Kingdom have no pharmaceutical service, because young pharmacists refuse to go into the rural districts, has asked the Minister of Public Instruction to admit women to the study of pharmacy. It is not asked that they be given the diploma of pharmaceutical chemist, but simply a certificate of ability to

practice pharmacy. It is believed that this will prevent the great inconveniences of the illegal practice of pharmacy, and will provide pharmaceutical facilities for communities in need of them.

It is to be remembered that in Italy, as in other European countries, the drug stores are under government control and supervision—the druggist is a government appointee, and one cannot own a drug store unless he is a pharmaceutical chemist and gets a government appointment. The number of druggists and drug stores is proportioned to the number of inhabitants, both in the cities and in the country, so that the druggist is sure of a legitimate trade, and does not have to eke out an existence by selling patent medicines, toilet articles, paints, kerosene oil, cigars and chewing-gum. The people are likewise protected by government supervision as to the purity of the drugs, and as to the competency of the druggist to prepare them.

This is a further illustration of the fact that while some of the European governments may be "effete monarchies," as our newspapers are pleased to call them, they still act on that sound principle of common sense, that the health of the people is the nation's wealth.

A QUESTION OF CRIMINAL NEGLIGENCE.

A number of years have now elapsed since the question of color-blindness among railway employes was first brought before the public. Since that time so many examinations have been made of the color-vision of railway employes, so many of such employes have been found to be partially or totally color-blind, and so many accidents have been caused by the color-blindness of locomotive engineers and other railway employes, that it becomes a serious question, are not railway companies guilty of criminal negligence—negligence of *ordinary* precautions—when they place their trains in charge of color-blind men, or when they employ color-blind men for positions in which, on account of their defective vision, accidents may result? The facts are so many and so clear that it would be idle for a company to set up the defense that testing the color-vision of their employes is an extraordinary, not ordinary precaution.

There is another question in regard to these tests for color-vision. Are the examinations made, in addition to the Holmgren tests, with colored lights in a dark room? Railway locomotive engineers say that while some men can easily distinguish red and green colors by day, they cannot distinguish red and green lights at night as they should—and conversely. It

also seems to be the case that while some men cannot distinguish red and green as such by day, they see that there is a difference, and are guided by it; but on a cloudy, foggy or rainy night, they sometimes find it impossible to make out the real color of the light shown, and are often guided by the better vision of the fireman.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, January 16, 1888.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

DR. E. J. COLBURN read the report of
A CASE OF EPILEPSY CURED (APPARENTLY) BY THE
CORRECTION OF AN ERROR OF REFRACTION.

(See page 189.)

DR. E. L. HOLMES: The report, I think, speaks for itself; I do not know what can be said of much interest in addition. We simply know the fact that, in very rare cases, the proper adjustment of glasses has cured epilepsy. We know that paring a corn may give relief, but that does not prove that corns are often the exciting cause of epilepsy. There are said to be very rare cases in which small shoes with high heels have produced a general nervous condition—headache and disturbance of the muscles of the eyes. It is useless to adjust glasses in the hope of cure until the general nervous condition has been relieved by "common sense shoes." A contracted prepuce may be, although very rarely, the exciting cause of epilepsy. So we can go through the whole series of remote nervous irritation producing the trouble we call epilepsy. There are some cases that are exceedingly interesting but at the same time rare. Many of the cases that are reported are simply coincidences. It shows us, however, how important it is in nervous trouble to seek the cause and to have the eyes relieved as far as possible by proper glasses. This may not only cure epilepsy, but also other nervous troubles.

DR. F. C. HOTZ: The case reported bears on a very interesting question which only within the recent past has attracted general attention. If this was the only case and we had to judge the result of the treatment on its own merits; that is, if it was a single isolated case, without any other experience to support it, of course we would be rather reluctant to admit the doctor's conclusions, even perhaps in the modified form, as apparent relief; especially as, in the history of this case, besides the adjustment of glasses other means have been used which are known to give temporary relief in such attacks. But, fortunately for the reporter and fortunately for us, similar cases have been reported, especially through the methodical investigations which Dr. Stevens, of New York, has carried on for the past ten years. It was

he who conceived more clearly than anyone else, I think, the idea that functional disturbances in the eye, an overtaxing of the muscles adjusting the sight or controlling the motions of the eyeballs, have a far-reaching influence on the whole nervous system of the human body, and are among the most prolific sources of nervous diseases. It is well known that irritations of the eye go far to excite reflex irritation somewhere else; I need only refer to the general disturbances created by an attack of glaucoma or iritis. But I believe, in cases like the one reported to-night, the general nervous disorder is not caused by reflex irritation (for there is no irritation in the eyes); but it is the result of an overtaxing of the nerve forces. Every human organism is endowed with a certain amount of nerve force; in some this force is largely in excess over the amount necessary for all demands of the physiological functions; in other persons, however, it is barely sufficient. It is this latter class, which has no reserve force to draw upon, that constitutes the large army of so-called nervous people. Now if in such a person, to whom the nerve force has been scantily measured out, the adjustment of the sight or the harmonious movements of the eyeballs are executed with difficulty, requiring a greater nerve stimulus than under normal conditions, the eyes appropriate a larger portion of the nerve force than they are entitled to; they continuously drain, as it were, the resources of the nervous system, exhausting the supply of nervous force which ought to go to other parts of the organism, and under these conditions there a very trifling exciting cause may produce marked neurotic disturbances.

When we read the published observations of Dr. Stevens, based upon 2,000 cases, we cannot help admitting that there is a great deal of truth and logic in his conclusions; even if we assume that a pioneer in a new field is unduly enthusiastic, and perhaps carries his conclusions a little further than the actual facts will admit on cooler reflection and larger experience. We owe Dr. Stevens a great deal for pointing out this subject; it is as interesting to the general practitioner as to the oculist; it will induce the practitioners to pay more attention to the diseases of the eye than they used to. It is a field in which the general practitioner and the specialist can very profitably cooperate, because these cases usually consult the general practitioner first; we do not see them unless they have marked disturbance of the eyes, and thus we often accidentally relieve other troubles. I suppose every oculist has had an experience similar to my own, that patients who have been forgotten by us meet us years afterwards and thank us, saying that by adjusting glasses or relieving some other functional disturbance of the eye they were relieved of chronic headaches or other nervous disturbance. It is the systematic investigation of the relation of eye-strain and nervous disorders which I think is the great merit of Dr. Stevens, and such observations as have been reported to-night are valuable contributions to confirm Stevens' conclusions.

DR. W. F. COLEMAN: The report that Dr. Colburn has made is exceedingly interesting, and if I understand him aright in regard to the treatment, all

previous treatment had almost entirely failed to relieve the patient and nothing had been accomplished when he adjusted the glasses, and subsequently to that the patient was apparently cured. The inference is fair that the adjustment of the glasses was the means of curing the patient. In reference to the cause of eye-strain, we see it in three directions: In errors of refraction; in insufficiency of the orbital muscles; and of accommodation, actual or relative. All oculists agree as to the effect of eye-strain in producing peripheral and central nervous symptoms. In my own experience correcting insufficiency of muscles has relieved most severe and persistent headache, such an amount of headache as to induce the general practitioner to send the patient to me for examination of the eyes, to determine whether there was cerebral disease, and there would not be found any optic nerve trouble, but an error of refraction or insufficiency of ocular muscles which, relieved by glasses, relieved the headaches. Migraine is another disease which is frequently relieved by correction of errors of refraction. A few days ago a patient came to me who had persistent nausea occasioned on every attempt to read, and which, if persisted in, almost induced vomiting. I corrected a trifling astigmatism and the nausea was at once relieved.

As to the cause of epilepsy: if peripheral irritations, as phimosis, calculus of the bladder or irritation of the ovary will produce an epileptic seizure, why not such a constant source of irritation as an eye-strain caused by an error of refraction, or, possibly more commonly still, by insufficiency of ocular muscles?

As to Stevens' results: he claims that of 64 patients on whom he operated on the ocular muscles, dividing the internal recti for insufficiency of the external, he cured 50 per cent., 40 per cent. were relieved, and only 10 per cent. unrelieved. Dr. Ranney, who is a follower of Stevens, has operated on 200 patients. He has treated 16 patients for epilepsy (8 by operation), cured 3, and relieved 4 out of 5 of the remainder. Dr. Stevens' claim seems to us as professing too much, but when we take his results into consideration we can scarcely be totally skeptical.

I suppose his method is that when the insufficiency is in the internal rectus muscle, which is determined by examination with prisms, he punctures the external rectus muscle, leaving the inferior and superior border of the muscle intact if there is only a limited amount of insufficiency, say 5° or 10°. We cannot dispute his clinical results, but what astonishes me is the claim of insufficiency of the internal rectus being relieved by a puncture of the external rectus. I do not say that it is impossible, but it astonishes me that a simple puncture of the external rectus will relieve an insufficiency of the internal. That is the means which Dr. Stevens resorts to to relieve his patients. He finds errors of refraction and accommodation and corrects those errors. In one instance, in an asylum, he selected 12 cases of epilepsy with dementia. Those 12 cases had, in the month previous to his operation, 170 attacks of epilepsy, but subsequent to his operation, which consisted of puncture of the external

rectus muscle principally, they were relieved to the extent of 75 per cent. This statement is corroborated by the Superintendent of the asylum.

These are facts, whatever the explanation may be, that we cannot ignore and cannot be altogether skeptical about. I have great respect for these statements, and full confidence that the claim by the reader of this evening's paper of an apparent cure of epilepsy is the direct result of the correction of an error of refraction, and I think from the course of treatment pursued before the error was corrected that the inference is very fair.

DR. CASSIUS WESCOTT: As I had the pleasure of seeing the case reported by Dr. Colburn, I would like to emphasize one or two points: I think there can be no doubt as to the patient's epilepsy; his attacks as described and as witnessed by myself were quite characteristic. In some of his attacks he was, no doubt, unconscious, but in others he probably did not lose consciousness. But the condition of unconsciousness is not now regarded as an absolutely essential feature of an epileptic attack. I have seen patients in the Illinois Eastern Hospital for the Insane, who had frequent attacks of *petit mal* and *grand mal*, who were evidently conscious throughout some of those attacks.

As to the treatment of this patient before he got his glasses, I think it could have had very little effect after the adjustment of the lenses, because the doses of bromides were small and discontinued entirely before the glasses were used. I believe that any person of a neuropathic tendency may have epilepsy induced by any persistent local irritation, and those of us who have experienced eye-strain know full well what an annoying irritation it is.

The theory of Dr. Stevens seems to me quite rational; but regarding the cause in this case as simple local irritation, I think it was quite sufficient, for I had the opportunity to witness the distress the patient suffered from attempts to use his eyes without glasses, and his general nervous irritation was clearly manifest. The flushing of the countenance and distension of the vessels of the head was quite noticeable.

DR. J. E. COLBURN: It is a well-known fact that hypermetropia and astigmatism, and any error of refraction that increases the effort of the ciliary muscle, also increases the action of the internal rectus, and almost invariably we get with hypermetropia more or less preponderance of the internal rectus. Of the 375 cases of hypermetropia that I have tested during the past year, with this in view, I have found over 95 per cent showing a preponderance of the internal rectus. Not necessarily a lack of strength of the external, but the comparison between the two making it either a preponderance or an insufficiency, whichever you choose to call it. Regarding the method of operating: I had, two years ago this spring, the pleasure of being with Dr Stevens two or three weeks, witnessing his daily office work. The operation is simply taking the conjunctiva up, cutting through it and then exposing the ocular end of the tendon, grasping this with a pair of forceps and snipping away the central portion of it, not detach-

ing it completely, but leaving it adherent above and below. I know that this will relieve as high as 12 of insufficiency and many times give a result of divergence. In a case that I recently operated on in which there was hystero-epilepsy, a marked case which had been under the treatment of some of our best specialists, the result was a — 2, and I only cut the central fibres. I know it because when I did the operation I felt the attachments above and below. The operation was done four weeks ago; up to the time of the operation she had had repeated seizures, but has had none since. A case that I tested nine months ago has had but one seizure since, although she had been having them almost constantly before that. In this case the treatment was given without the patient being conscious of our object in giving her relief; she had never had any consultation with her physician about glasses giving her relief, and nothing was said to her by the family.

In regard to the statement of no loss of consciousness: It was the patient, not I, that made the statement. I saw him in one attack in my office when I knew he was unconscious. He was under treatment in one of the best Western asylums and had all the care that could possibly be given; but immediately on resuming his work the seizures returned with their old violence. After he came under my observation he attempted in my office to do a little writing, but just as soon as he tried to do anything of that kind I could see the pulsation in his head and neck, the capillaries would show marked distension and he would become morose and sullen, then he would go out and wander around the streets for a few hours and have a seizure on the street or at his boarding-place. But since I put him under treatment up to this time he has had but one seizure, and from a flushed, red-faced, brawny looking fellow, a man who looked as though he would have all the bad impulses and habits of drink (many times I thought he must be under the influence of opium or liquor), he has improved until people who knew him before hardly recognize him. When he was at school there was much the same manifestation, though in less degree.

I do not claim that errors of the recti muscles are the cause of many cases of epilepsy, but I think that in certain cases it is so. I have known Dr. Stevens' work for fifteen years. He was my instructor in Albany in 1873, and I have seen his work at intervals during these years. While he is an enthusiast, he is honest and candid, and his work will show him to be conscientious and an accurate observer. I remember that a few years ago it was almost a disgrace to speak Dr. Stevens' name; it would be said, "Oh, he's the prism crank!" He labored under disadvantages. The question of reflexes had not received its full recognition. But I think any one who has suffered from error of refraction can easily see how an irritation of this kind can produce cerebral congestion and this go on until it explodes in the form of a fit.

I remember a case of a boy of 18 or 20 years who, during the latter part of every term of school, would suffer from nervous sick headaches until he would get into a hysterical condition and have to leave

school. Bromides and chloral were tried, but all of his school life was marred by this defect, and it was not until the error of refraction was corrected that he was able to do systematic work.

I saw many of Dr. Stevens' cases of epilepsy, and it was wonderful to see the results of two or three weeks' treatment. Patients would come there—drooling, idiotic children, young men and women, and their whole physical condition would seem to be changed. I remember a child, in appearance about 13 years of age, but in reality 18 years old. She was drooling and idiotic-looking, and in three weeks I saw the child and failed to recognize her. Her head was up and her whole bearing changed, and she was bright-looking. Before that she would come into the room sullen, suspicious and angry. It seemed almost a marvel, and I do not wonder that Dr. Stevens was many times seemingly extravagant in his statements.

In regard to failure to cure, I think it is well established that nervous cases are the most difficult to manage. There is a certain condition, a neurasthenic tendency acquired or hereditary, and when the predisposing cause is removed there may be for a long time a slight irritation. I have noticed many times in treating cases of chorea, directly due to errors of refraction, that the patient would show marked signs of movement every time the menses came on, showing that a little disturbance throwing the system out of its usual routine would bring it about.

I call to mind a chorea patient that I first saw on a street-car. She was with two women who got her in and out of the car as well as they could. There was something about the position of her head and eyes that attracted my attention. As they were evidently poor people, I handed my card to them. They called upon me in the course of three weeks. It required the efforts of the father, mother and sister to get the child into the office. Within two months from the time of her first visit and two weeks following her full correction, H. a = + 2, + 1 ax 90, the chorea had almost disappeared—so much so that a person unacquainted with her would hardly notice the unusual motions, and within a year there were no choreic motions except a nervous movement of the hand. Before that she was fast getting into an epileptic condition. Now she is perfectly well, using her glasses. In her case I was obliged to do tenotomy to relieve 80° insufficiency. In the case of Mr. T. I did not do tenotomy, as I was able to overcome the insufficiency. I had plenty of time and I practiced him with prisms for a month or six weeks and then taught him how to do it. I would again call attention to the intimate relation between hereditary nervous headaches, chorea, epilepsy and insanity; to the hereditary transmission of ocular defects and their resulting irritations, and to the apparent frequency with which they occur in the same patients.

(To be concluded.)

Dr. Henneage Gibbs, late of Westminster Hospital, London, has just entered upon his duties as Professor of Physiology in the Medical School of the University of Michigan.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, December 8, 1887.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

(Concluded from page 186.)

DR. M. PRICE exhibited a

KIDNEY REMOVED FOR GUN-SHOT WOUND.

The patient, a young girl, was handling the weapon when it exploded, the ball entering in front, on the right side, and passing through the liver and kidney and burying itself in the spinal muscles. At the time of the operation, twenty-four hours later, the pulse was 150, the temperature 103°; peritonitis had set in and the patient was in a collapse. An incision six inches long was made and arterial blood was seen escaping from the kidney, which it was thought best to remove. The liver wounds were dry and not oozing. Rapid improvement continued for nine days, but there has since been a rise of temperature, and now, the 19th day, temperature is 100°, pulse 108, and all doing well.

DR. KELLY said that Dr. Price would have to defend himself better for removing that kidney. The indication was almost as great for removing the liver, which the ball had also traversed. The hilum was a half inch distant and a suture would have been safe and would have checked hemorrhage. I thus stopped the flow following the puncture of a trocar in a case of hepato-phlebotomy which I performed a few weeks ago. I think Dr. Price will find sufficient evidence for this late rise of temperature in a focus of suppuration around the ball in the lumbar muscles.

DR. J. PRICE remarked that a large quantity of arterial blood had been voided from the bladder a few hours after the injury: this hemorrhage was irregularly recurrent showing its kidney origin, and that large vessels about the hilum of the kidney had been wounded. Stitching of the kidney would not have been sufficient—incision and ligation was out of the question. All the indications were for removal. The diagnosis had been clearly made of renal injury.

DR. M. PRICE said the kidney lay far up under the liver, and was hard to get at, that even if a suture could have been put in the anterior wound it would have been utterly impossible to have reached the posterior one, excepting by another incision through the back; besides this, the blood welled up so freely that it was not possible to see exactly what he was doing, and he had to trust to his sense of touch. He could not account for the high temperature at this late date, excepting it be from the collection of pus at the end of the tube, which was not removed, as it should have been.

DR. B. F. BAER presented the specimen and read the following report of

A CASE OF TRAUMATIC HÆMORRHAGE INTO AN OVARIAN CYST, FOLLOWED BY PERITONITIS.
OPERATION. RECOVERY.

I feel warranted in presenting this specimen and relating the history of this case because of its unusual

character. E. A., *act.* 45, married, seven children, youngest 7 years, miscarriage two years ago; had always, until the present trouble, enjoyed good health. In December, 1886, while engaged in rearranging her furniture she lifted one end of a heavy chest. She soon after became conscious of a slight pain in the left ovarian region, but she continued with her usual work. That night, however, she was awakened by a sharp pain in this region, so severe as to cause her to "bend and writhe in agony." The pain extended down the left thigh and to the back, was accompanied with nausea and vomiting, and continued with great severity during the entire night before she obtained any relief whatever. On the next day her entire abdomen had become very tender and swollen (tympanic), but the severe pain of the night before had subsided. She gradually recovered from this attack, and was about again within two weeks, but she still had occasional attacks of sharp pain, and was treated for neuralgia. Soon after this she noticed that her abdomen was larger than usual. She had changed physicians and was treated for "dropsy and worms," by free purgation. This greatly prostrated her and caused a return of the pain and other symptoms of the first attack.

My friend, Dr. O. K. Adams, was now called, and found the patient in great agony, the pain being most severe in the left ovarian region, but extending over the entire abdomen, which was tympanic. The thighs were flexed, and her expression anxious. Temperature 103° . On the next day it had risen to 104° . She remained very ill through the next few weeks, after which she gradually improved. When the tympanitis and tenderness had subsided enough to permit an examination, Dr. Adams discovered a cystic tumor in the lower abdomen, which he correctly pronounced ovarian. As soon as she was able to be moved, the patient was sent to me.

On examination, with the patient in the dorsal position, I found the abdomen distended by a circumscribed mass which occupied a position between the umbilicus and the pubis, projecting and about the size of the pregnant uterus about the sixth month, though not symmetrical, being to the left of the median line more than to the right. There was no resonance over the entire surface of the abdomen, even over the tumor on light percussion; deep percussion, however, gave a dull note. By palpation the tumor was found to be fixed to the abdominal walls and deeply in the left pelvic region. Vaginal examination showed the uterus to be retroverted, and upon it the lower surface of the abdominal tumor.

To the left of the uterus a nodular mass was felt, apparently connected with the lower surface of the tumor. Movement of the tumor caused the uterus to move with it. Fluctuation was elicited by bimanual palpation. I advised immediate removal of the tumor, although the patient had not yet fully recovered from the last attack of peritonitis. Temperature still above 100° , sometimes 101° in the afternoon. This advice was based upon the recurrent character of the inflammation, and its probable traumatic origin—twisting of a pedicle or rupture of a blood-vessel. Rupture of an extra-uterine gestation

sac had been suspected, although signs of pregnancy had been absent. There had not been suppression of menstruation, but since her first attack of pain her catamenia had been very profuse, lasting from ten days to two weeks.

Operation. March 15, 1887. Incision 3 inches long in the usual position, and the tumor exposed. It was now found that adhesion between the cyst wall and that of the abdomen was so intimate that it was difficult to distinguish which was the cyst and which the peritoneum. I began by separating the tumor from the peritoneal surface, hoping to find a place where adhesions did not exist, but in this I was disappointed, for the peritoneum was firmly glued to the anterior and lateral surface of the cyst wall, while above the intestines and omentum were closely adherent to it. The tumor was now tapped, and a thin, serous-looking fluid tinged with blood, was drained away. The cyst was only partly emptied, as it contained a semi-solid material which could not flow through the canula. Room had, however, been gained so that the dissection could be continued. By a careful manipulation the upper part was separated from the intestine and omentum by amputating the latter, when it was found that the lower lateral surface was adherent to the sigmoid flexion, while the base of the tumor, broad ligament and uterus were so united as to form one mass.

After farther dissection the cyst was drawn out and the short thick pedicle examined. This was found to contain masses of thick, clotted blood, both within and around it. After further cleaning and examining, this nodular mass was found to be the Fallopian tube, distended at several points with clotted blood. A temporary ligature was now thrown around the base of the cyst, which was then removed. This facilitated the further dissection which was necessary to form a proper pedicle, which was now transfixed and tied, and the smaller mass cut away. The right ovary was healthy and was not removed. The abdominal cavity was next thoroughly cleansed, a drainage tube inserted and the incision closed. The patient recovered, and went home on the twenty-eighth day after the operation, but it cannot be said of her that she recovered "without a bad symptom." She did comparatively well during the first four days, but on the fifth day her temperature increased to 103° , although there was no pain or other symptoms of active inflammation, the next day it was 104° . The patient now complained of pain at seat of pedicle, and the left leg was found to be slightly swollen. The drainage tube was now removed, although there was still some discharge through it. The bowels were also moved by a turpentine enema. Her improvement after this was slow, but sure, and she sat up on the eighteenth day.

Examination of the specimen after its removal showed it to be a thin-walled monocyst. It was quite half-filled with a fibrinous material, a portion of which is presented with the cyst. This was not attached to the cyst wall, and resembled coagulated blood in process of organization. The lining membrane of the cyst was smooth, except at several places where a dilated vein as large as a quill was apparent.

The knotted irregular mass which formed the pedicle was the Fallopian tube and broad ligament. Why it was in this condition is difficult to determine, unless it was from twisting of the pedicle, but this could not be fully made out at the operation. The dilated condition of the veins in the cyst and in the pedicle and the evidence of hæmorrhage within the cyst cavity, as well as around the pedicle, render it probable that rupture of blood-vessels from stasis had taken place.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, January 25, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. JAMES TYSON exhibited

FLEISCHL'S POLARIZING SACCHARIMETER,

made by Reichert, of Vienna, and explained its use. The deviation is indicated by the displacement of a dark band continuous in two parallel spectra, when no glucose is interposed and the instrument reads 0. When a column of sugar is interposed a deflection takes place, and after the continuity is again restored the *percentage* of sugar is read off from the vernier. Dr. Tyson said the polarizing saccharimeter could not be recommended for testing qualitatively very minute quantities of sugar, say anything less than $\frac{1}{2}$ of 1 per cent., Fehling's solution being really more delicate. Nor can it be said that there is any saving of time in testing quantitatively solutions containing less than 1 per cent. The advantage of its use is shown in determining from day to day the quantity of glucose in specimens containing considerable amounts, where the requisite dilution and titration occupy much time. In very clear urines it is not necessary, with Fleischl's instrument, to decolorize with acetate of lead solutions, but where they are not almost colorless it is necessary to treat with basic acetate of lead in the proportion of 1 c. c. to 10 of urine and filter, when one-tenth should be added to the reading of the vernier.

DR. L. WOLFF said: The instrument to which Dr. Tyson referred, and which I had the honor to bring before you here, is known as a polarization-microscope, though this is an improper term, as it is simply the utilization of the microscope stand for the adjustment of the parts of a polarizing saccharimeter. I imported the parts constituting this about a year ago from the manufacturer, Paul Waechter, of Berlin. Its principal advantage is that of price, which, to the best of my recollection, is about twenty-five dollars when bought here. Like all other saccharimeters it consists of a polarizer which, as you see, is attached to the substage; on the top of this fits a plate consisting of two demidisks of quartz of opposite rotary power, which let the intersecting line be readily seen through the analyzer. This latter with the vernier and nomus fits into the microscope instead of the draw tube. The analyzer or

scale can be so adjusted that when the nomus points to 0° the two semidisks will be of an even neutral violet tint. In this position it is fixed with a screw. The tube is then withdrawn and the glass container with the urine is screwed in, when the whole is replaced. In looking through the instrument it will now be seen that the two semidisks are no longer of neutral tint, but one is red and the other blue. On rotation this inequality of color will disappear at a certain point, and when the neutral violet tints are again seen, the angle is read off. With this angle you can refer to the accompanying table and read off the amount of sugar present in grains contained in one litre, or by dividing this by ten the percentage will be arrived at. I have used this little instrument a great many times, and find that it is quite as accurate as the larger and more expensive apparatus.

It is my custom to make about six readings, which is very rapidly accomplished, and take the mean thereof by dividing the sum of the readings by six. With some practice and an eye trained for color the results come generally within $\frac{1}{10}$ of 1 per cent. of the amount of sugar present. Like every other instrument, it requires practice to get good and accurate results. While for those who have to make many quantitative determinations of sugar in urine the polarizing saccharimeter offers great advantages. I quite agree with Dr. Tyson that, for single and isolated determinations, Fehling's method is quite as rapid and certain as reliable. The general use of the polarizing saccharimeter together with its advantages and disadvantages, and also the preparation of the urine for that purpose, have been so fully explained by Dr. Tyson, that there is nothing further for me to add.

NEW INSTRUMENTS.

SELF-RETAINING PALATE RETRACTOR.

BY JOSEPH A. WHITE, A.M., M.D.,

SECOND SURGEON TO THE RICHMOND, (VA.) EYE, EAR, AND THROAT INFIRMARY.

After some months of experimentation, I beg leave to submit to the profession the useful instrument represented in the accompanying cuts.



The principle of its construction is so very simple, that it is strange we have not had such an appliance long back. It is made by Mr. Charles Wiltner, 224 N. Howard St., Baltimore, Md., who perfected it for

me about the middle of December. Since then I have used it so frequently and with such perfect satisfaction, both for the examination of the post-nasal cavity and for various operations therein, such as removal of adenoid tissue, snaring lower turbinated hypertrophies and galvano-cauterizations, that I now consider it an invaluable addition to the rhinologist's armamentarium. For a long time back I had used to draw the palate forward, for examination, a simple loop of silver wire, with a short rubber band which caught between the teeth when practicable, or with two long rubber loops which hooked over the ears, as less uncomfortable than passing a piece of rubber tubing through the nostrils out of the mouth, and tying it over the upper lip.

The latter method I always used for operations, as more reliable and less likely to become displaced than the former. The present instrument, however, does away with both methods, and is infinitely preferable to either.

It is made of a square steel bar about 3 mm. thick, terminating in a loop of pure silver wire heavy enough to hold the palate and light enough to be readily changed in shape by the fingers to suit each individual case, being made smaller for children and larger for a more capacious pharynx. On the bar slides the attachment which clamps over the upper lip and holds the retractor in position. This sliding attachment, with two arms, requires no fixation to keep it in position, the tension being alone sufficient to make it immovable on the square bar. For greater security, however, in performing an operation, a small fixation screw is attached to the side of the slide to fasten it securely, so that facial contortions must not displace it.

As shown in the plates, I had two attachments made at first, one with two steel wire arms terminating in silver wire loops, the ends of which caught in the nostrils, or on either side of the alæ of the nose, and another attachment terminating in two hard rubber buttons, which caught in the depressions over the alveolar processes on the same principle as a similar instrument described in the *Medical Record*, of Jan. 14, 1881, by Dr. Porcher, of Charleston.

The reason of the two attachments was that I found in some cases one suited, and in others the second attachment was preferable. Since the plates were made about January 1, I find the one with silver loops answers both purposes, as it can be moulded by the fingers to suit any case, just as the terminal loop of the bar which catches the palate.

There is but one objection to urge against the instrument, and that is, that the bar may get in the way of operating in the right nostril, but this does not hold good if the operator is ambidextrous, and moreover, it is so small that it is not much of an obstruction. It is applied and moved so rapidly that it can be taken away repeatedly in performing operation to rest the patient or the surgeon. My experience already has demonstrated its great advantages over any known method for working in the post-nasal cavity, and I am satisfied any of my confrères who give it a trial will agree with me.

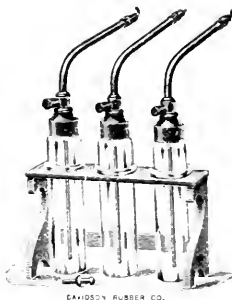
A NEW ATOMIZER FOR OFFICE USE.

BY E. FLETCHER INGALLS, AM., M.D.,

PROFESSOR OF LARYNGOLOGY, RUSH MEDICAL COLLEGE, ETC., CHICAGO.

I wish to call the attention of the profession to a new atomizer for office use, that has been made at my request by the Davidson Rubber Company. It is known as "Davidson's Combination, No. 66," by which name it can be procured through any of the instrument dealers in this city.

All atomizers, thus far, have been more or less defective, but the one shown in the cut comes nearer to perfection than any other I have seen.



The spray-tube is made of hard rubber and consists of two parts, an inner and an outer tube. The inner tube through which the fluid rises, extends from the bottom of the bottle containing the medicated liquid, to the end of the spray-tube, where it is capped by a smaller movable tip. The outer tube, which conveys the blast of air, extends from the top of the bottle, to which it is firmly fixed by a screw thread, to the end of the instrument, where it is capped by a removable tip. There are three different tips for each outer tube, which enables the physician to throw a spray either horizontally, at a right or oblique angle, up, down or laterally. One of these tips is half an inch in length, which renders it peculiarly serviceable for throwing spray into the naso-pharynx, a place that it is impossible to reach in a majority of cases with the short tips furnished with other instruments. As the tips of both the outer and inner tubes can be easily removed, the tubes may be readily cleansed if they become stopped. By removing the tip from the inner tube, and screwing down firmly the tip on the outer tube, this instrument will throw freely fluid cosmoline or oil, even with a low pressure, or by the hand ball.

Each of these atomizers is so constructed that it fits accurately upon the air cut off, manufactured by the same firm, and with each set is an extra attachment which enables either of the instruments to be used with the ordinary rubber hand bulb.

These instruments are put up, three in a set, in a neat little rack, and as each has three tips, the set is equivalent to nine spray-tubes of the ordinary apparatus.

The tubes being made of rubber, anything which

a physician is likely to employ as a spray may be used through them without injury, excepting iodine. All metallic spray-tubes, (excepting very expensive platinum) corrode with various solutions, and are therefore soon ruined. Glass tubes are more bulky than these, are more difficult to clean, and are subject to a great deal of breakage, which renders them expensive, while at the same time three of them are required to answer even a part of the purpose of one of these.

The spray tube itself, in these instruments, is not new, it being the same as that in Davidson's No. 59, old style, hand atomizer, which, by the way, is now the best instrument in the market for the patient's use, if one is careful to order the screw top and long tip. One of these tubes I have had in almost constant use for many years, and it is still good.

I have brought this matter before the profession because I believe that we now have a much more reliable instrument than ever before, and I believe a single set of this kind would be found very valuable even to many general practitioners.

For the complete outfit of a laryngologist's office nothing can surpass in utility a suitable number of these instruments, arranged in a convenient rack.

No. 70 State Street.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Muscular Force of Epileptics—Nature and Treatment of Granular Conjunctivitis—Antiseptic Treatment of Diphtheria—Treatment of Burns.

At the last meeting of the Société de Biologie, Dr. Féré read a note on the muscular force of epileptic subjects. From observations of several epileptics in his hospital ward, he ascertained that the muscular force of these patients, measured by the dynamometer, was less by one-fourth or one-third that of healthy individuals. This is contrary to the generally received opinion. The author then wished to ascertain the modifications these muscular forces underwent in the different manifestations of the disease. Dr. Féré noticed that frequently the "aura" coincided with a diminution of the muscular force, and that the same was the case after the fit, whether the latter was complete or incomplete, as well as after simple vertigo. He also noticed that this diminution was generally predominant in one of the sides of the body, and it was precisely in that side where the convulsions predominated. This fact is not to be wondered at, and it confirms the theory of Hughlings Jackson, who claims that the period of stertor consecutive to the fit is comparable to an attack of apoplexy with hemiplegia. Dr. Féré moreover noticed that the diminution of the muscular force was more marked after the nocturnal than after the diurnal attacks.

In his thesis for the doctorate, M. Desormes chose for his subject the nature and treatment of granular

conjunctivitis. Starting from the principle of the contagiousness of granular conjunctivitis, which had been demonstrated by Sattler and other observers to be due to the presence of a specific microbe, the author advises the application of local and at the same time general treatment. The former is to be directed against the infecting agent, whilst the latter should have for its object the placing the organism in a state to resist this agent. As long as the granulations have not reached the period of organization, the author employs the glycerate of the sulphate of copper in the proportion of 1 to 8 parts. When once the cicatricial tissue is formed, the microbe becomes surrounded by a sort of fibrous shell which protects it against the action of the drug. In these cases, after having rendered the conjunctiva insensible with cocaine, the granulations must be lightly touched with the point of a small camel's-hair brush dipped in a solution, very concentrated, of chromic acid. The next day the small scar which had been formed will be found detached, and one is then able to canterize the eyelids with the glycerate of the sulphate of copper which, in this manner, is put in contact with the microbe. Five or six cauterizations with the chromic acid suffice to obtain a notable improvement. The cauterizations should be practiced every four or five days. At the same time the organism should be supported by means of appropriate remedies and substantial food. Elevated positions are very favorable to the cure, as it has been observed that conjunctival granulations do not develop beyond a certain height.

In the *Archives de Laryngologie*, Dr. Legendre, writing on the antiseptic treatment of diphtheria, states that after having examined the different antiseptic remedies imagined against this malady, the author brings prominently to notice the energetic procedure adopted by Dr. Soulez, of Romorantin, and which has been applied by Dr. Gaucher, physician to the hospitals of Paris. The principle of the treatment is to concentrate all the efforts of the physician in the destruction of the false membranes and the antiseptic cauterization of the subjacent mucous membrane. The treatment consists in the application with a rather stiff brush impregnated with a saturated solution of carbolic acid and camphor in alcohol, but before applying the brush the superfluous liquid should be pressed out so as to prevent any of it falling into the larynx. The brush is then vigorously applied to all the parts of the throat which are covered with false membranes, and in such a manner that as much of the latter may be mechanically removed as may be possible. The application should be made three or four times in quick succession, without being deterred by the terrible sufferings caused by the operation. This should be done twice daily until the false membranes have ceased to be reproduced. In the intervals frequent irrigations with a solution of carbolic acid of 1 per cent. should be practiced. The absolute condition of the success of the treatment appears to be in the energy with which the cauterization is practiced. One must not only remove by rubbing the pseudo-membranous layers, but the denuded mucous membrane must be

modified, and the penetration of infectious agents into the capillaries, become gaping and bleeding by this denudation, should be prevented. There is, however, one grave objection to this method: and that is, it interferes with deglutition and alimentation by the intensity of the inflammatory reaction which it produces. Nevertheless the remedy, however cruel, is necessary, and the medical man should really be armed with sufficient stoicism to be, as it were, callous to the sufferings of the patient. It was to the adoption of this energetic measure that Dr. Gaucher attributes the saving of the life of a hospital interne (Albaram) who contracted diphtheria for the second time in the same year at the hospital for children. He very probably would have succumbed, judging from the increasing gravity of the symptoms, had not Dr. Gaucher applied, in all its rigor, the method above described, and it was from this moment that an amelioration which ended in cure became manifest.

In the Paris letter that appeared in *THE JOURNAL* in October last was given a new treatment for burns. I now transcribe another from *Le Monde de la Science*, which consists in the application of compresses imbibed with a solution composed of from 5 to 15 grams of the permanganate of potash to 30 grams of water. The compresses are composed of calico and are frequently renewed. The remedy is certainly efficacious, but only in congelations of the first or second degree, and in burns of the first degree. In all cases, it rapidly suppresses pain and removes inflammation. When blisters are intact, supuration is always prevented.

A. B.

ham, Hunter, and Bichat. All of them specially prominent in medicine. Then he said, in brief: While the lectures will be devoted mainly to indicating the influence which certain individuals have exercised on the progress of the healing art, it must be borne in mind that to fully understand this influence, it is not enough to consider what physicians only have said or done. To attempt to isolate the history of medicine, and to comprehend its curious ebbs and flows of doctrine from medical writings only, is like cutting a narrow strip from the center of a piece of tapestry and speculating upon the origin and purpose of the cut threads and fragments of patterns that may be found in it. Medical history includes much that belongs to the history of philosophy, jurisprudence, and science, the chief difference being the different names.

The origin of medicine is to be explained from tradition and inference, rather than from history. There are two classes of legends and opinions relating to this subject; the first, which we find as a tradition everywhere, is that medicine is of divine origin and thus it is that in early times we find the healing art in the hands of the priests and connected with religious ceremonies. The second opinion includes such explanation as that given by Hippocrates, that it arose from experience of the effects of certain foods or injuries, developed at a later period as we shall see, into the doctrine of the empirics. Among barbarous and wandering tribes, and among nations of antiquity, we usually find traces of two systems of medicine and of two classes of physicians, one lay and the other sacred, corresponding to the two legends referred to.

Among the savage and barbarous nations of recent times, we find that the priests are usually physicians or medicine men, and are the superior practitioners who are resorted to in obscure or difficult cases, but also that there are others, sometimes women, who treat diseases with simple and natural remedies. The essential remedies are incantations, steam baths, propitiatory offerings, music, noises, and the removal of the evil spirit by suction. This may be seen from authentic accounts of the American Indian, among whom medicine in general, refers to what is supernatural or extraordinary, and the medicine man is one who possesses a knowledge and control of such matters; and in particular it may mean something like spirit; for every animate, and some inanimate, objects are supposed to have their own medicine or principle. The medicine man is much more than a physician; he is priest, rain-maker, and minister plenipotentiary of the supernatural powers, both good and evil. In a report on the Oregon Indians, Major Alvord says: "In some of these tribes any child may be trained for the position of medicine man; but among the Nez Percés, the position is inherited from father to son." The medicine of other uncivilized races is essentially the same as among the American Indians.

Among savage nations we meet with peculiar diseases in which only equally peculiar medicine is of service. Among which may be mentioned the trances of the Cossack women and the peculiar fever found

DOMESTIC CORRESPONDENCE

BOSTON LETTER.

(FROM OUR OWN CORRESPONDENT.)

Dr. Billings' Lectures on the History of Medicine.

A series of eight very interesting popular lectures has just been delivered to the people of Boston by Dr. John S. Billings, of Washington, D. C. The audiences that listened to these lectures were much smaller than seemed warranted by the importance of the subject and by the reputation of the distinguished doctor, and particularly this may be said in regard to the number of professional men present. From his long connection with the Library of the Surgeon-General's office (U. S. Army) at Washington, Dr. Billings is fitted as no other man could possibly be fitted to investigate this subject, difficult on account of its ancient origin, its dependence on traditions, its indefinite records, and the diversity of the theories and beliefs concerning it among different nations and in different ages.

Dr. Billings commenced his first lecture in the series by referring to the ten names arranged in two rows on the front of the new building of the Harvard Medical School. The names in the upper row are: Paré, Galen, Hippocrates, Celsus, Versalius; while those in the lower row are: Haller, Harvey, Syden-

in Abyssinia, which can only be cured by music and dancing. The very general use of suction as a remedy among savage tribes, not only in this country but in Africa and elsewhere, is curious and not easy to explain, although it may possibly be connected with the animal instinct of licking a wound.

In his "Folk Medicine," Mr. Black points out that three explanations of disease and death appear to be prominent among barbarous and ignorant people, viz: "1. The anger of an offended external spirit. 2. The supernatural power of a human enemy. 3. The displeasure of the dead."

The power of belief, faith, imagination, or expectant attention to affect the material organism is well known. At the present day it is played upon among civilized people: as the charm against warts by children, the faith cure and the consultation of mediums for advice, etc.

The moral of all this, first, that no opinion as to the causes of diseases, the effects of remedies, etc., can be made on a scientific foundation unless the influence of belief and imagination has been carefully eliminated by careful and repeated experiments and observations; and second, it would seem that mental phenomena of the well and of the sick should be a subject of study by the physician, and that this should be remembered in planning a course of instruction for medical men.

In the next lecture the use of magic was referred to in medicine, the remedies of the ancient priests consisting of charms, incantations, and talismans.

The earliest medical book is known as the "Papyrus Ebers," which was found a few years ago between the legs of a mummy in the necropolis of Thebes. Its date has been determined as 1552, B. C., and it is believed to be one of the so-called Hermetic books or writings which formed a sort of encyclopædia of science and philosophy, written by the priests. It is a compilation of receipts derived from different sources. An eye salve is mentioned, and also a hair tonic and certain remedies for skin diseases are introduced. Although it shows that medicine was essentially in the hands of the priests, yet it is entirely consistent with the statement of Herodotus, that in Egypt there are many physicians, some for the head, some for the eyes, and others for different parts of the body.

It does not appear that medicine was regularly studied among the Jews as a separate profession until the rise of the Alexandrian schools.

Among the Aryans in the earlier times, 1500, B. C., the chief of the tribe or father of the family was physician as well as priest. As the Brahmins increased in power and knowledge, they assumed the sole charge of medicine and compiled the Ayur-Veda, a sacred book relating to it. The qualifications of the professional teacher were required to be of the highest order, and the course prescribed was to begin at the age of 12. It was believed that there was a special remedy for every disease, but that its success depended upon the sanctity of the person who gave it, and that its efficiency would be impaired or destroyed if the formula of its composition were made known.

Legends in regard to medicine in China, go back as far as 3100, B. C. The first records we have re-

lating to Greek medicine, are found in the poems of Homer, which we may accept as dating from about 1000, B. C. Then medicine was not exclusively in the hands of the priests.

In the next lecture reference was made to the fifth and sixth centuries, B. C. Then there were fifty to sixty temples of Æsculapius. The chief ones being at Rhodes, Cyrene, Medos, and Cos, the last two being the most important.

Hippocrates (460, B. C.) was a native of Cos. He was in the seventeenth generation a descendant of Æsculapius. He was the best educated of his family, was a contemporary of Socrates and Plato. Physiology and pathology were not known at this time. The theory of medicine then was that of the four humors: the phlegm, the blood, the bile, and the atrobile being produced by the brain, the heart, the liver, and the spleen, respectively.

Plato expounded final causes.

Aristotle (354, B. C.) taught Alexander, the son of Philip. He paid some attention to anatomy.

Aulus Cornelius Celsus (Rome, commencement of the Christian era) wrote an encyclopædia which is the first medical treatise in Latin.

The fourth lecture commenced with an account of the second Alexandrian school, which was a mixture of the religion and superstition of the Greeks, Jews, and Christians.

The Arabs derived their medicine from Persia, which in turn got it from India and Greece. The first chemical treatise that we have worthy of the name was that of Geber, written about 840, A. D.

Avicenna (980-1036, A. D.) was the greatest of the Arabic writers on medicine, and for 500 years he rivalled Galen as an authority. The greatest development of medical science was among the Moors in Spain when it was in the hands of the caliphs. In the rest of Europe at this time there was no progress. There were more prayers and the kings and others of means went to the Hebrews for science. The eight crusades (1095-1291, A. D.) had a strong indirect influence on medicine by producing a change in the mode of thinking.

In the fourteenth century there occurred the famous "Black Death," from which one-quarter of the population of Europe lost their lives. The medical faculty of Paris, in a special report, advanced the idea that it was caused by vapors from the sea. Nearly all the specific fevers came from Europe. The first special quarantine was introduced at Venice in 1485, A. D., and it was for forty days, because the "crisis" was then supposed over.

Paracelsus (1493-1541) wrote much but his writings are worthless, except in relation to chemistry and alchemy (magic). He had a tendency to personify and not to abstract, and he founded the doctrine of signatures.

Van Helmont was a follower of Paracelsus who thought that the archeos, or creative principle was a ferment situated in the stomach which converted other things to be like itself.

Sylvius was mentioned in the next lecture as being, together with Paracelsus and Van Helmont, a founder of what was called the chemical school of medicine.

Of the modern forms of the school of Paracelsus there remain three worth mentioning: The first is mesmerism, also called magnetism and hypnotism. The second modern result is homeopathy, founded by Samuel Hahnemann (born 1755). He said: "There must be a perfect system of curing diseases easily, swiftly and surely. But there are only three possible methods. Disease must be remedied by something which produces in the healthy body either different effects or contrary effects, or similar effects. But the use of things which produce different or contrary effects is the ordinary method, which is utterly bad and vicious, since it often kills but never cures. Therefore the only remedy left is that which produces similar effects, and this, which is homeopathy, must be absolutely, invariably and exclusively true." The third modern result is the doctrine of Rademacher, which flourished in Germany about thirty years ago, and which taught that for every disease there is some specific remedy connected with it by the eternal nature of things.

The eighteenth century, so far as medicine is concerned, can be separated from the seventeenth only chronologically. At the commencement of this period there were three prominent medical teachers: Stahl, Hoffmann and Boerhaave, each the founder of a system and for the time having great influence. Connected with the animism of Stahl is another system of medicine, which flourished in the eighteenth century, known as the school of Montpellier, or more commonly vitalism. The doctrines of Hoffmann were diametrically opposed to those of Stahl. He did not believe that the soul is the cause of life, and he taught that the human body is a machine; complicated, it is true, and the life is a function of the organism. Boerhaave took something from all the systems and theories, hoping to unite them all into one homogeneous comprehensive body of doctrine.

The next lecture opened with a discussion of the relations of the physician to the State. In ancient Egypt, Chaldea and India, medicine was kept in the hands of a particular order or caste. This was also the case in Greece early, but we know that Hippocrates gave instruction for money. In the so-called Greek schools each master was a school for himself, teaching all that he thought requisite for the special education of a physician. During the Roman Republic there is no record of any public medical institution. From the tenth to the twelfth centuries dates the foundation of many European hospices and hospitals. Women physicians were first mentioned in 1057.

The separation of surgery from medicine was in part due to the fact that surgery was looked upon as a handicraft, degrading to and unworthy of those belonging to the nobility, as the physicians claimed to do, and partly to the fact that the physicians were priests, who abhorred the shedding of blood. Of the barber surgeons Ambrose Paré, who was born in 1517, acquired so great a reputation and so much influence as to give a sort of reflected respectability to his associates.

Anatomy was spoken of in the next lecture. No advances or discoveries were made in this subject in

the Arabian schools, where the dissection of human bodies was contrary to religion, nor in the West, pigs being operated on chiefly, and there was no innovation in this custom until Mundinus, Professor of Anatomy at Bologna, gave demonstrations upon two human bodies in 1315. Zerbi, of Padua, was another anatomist of about the same time.

Andreas Versalius (1514-1564) had the courage to controvert in some respects the opinions of Galen. When men began to believe the evidence of their own eyes even if opposed to the statements of Galen and to the dictates of the church, the time had come for another great step in advance, the foundation of scientific philosophy by the discovery of the circulation of the blood by Harvey. The old theory of Galen was that the veins arose from the liver and the arteries from the heart. Sir William Harvey was born in 1578, and he announced his discovery in 1616-19. This marks the commencement of a new era in anatomy and physiology. Closely following came the discovery of the absorbents or lymphatics, then the lacteals, and so on. The practical side of medicine is typified in Thomas Sydenham, born in 1624, who is often called the English Hippocrates. Marcellus Malpighi (1661) Professor of Anatomy at Pisa and Bologna, was the true founder of minute anatomy. Albert Haller (1708-1777), born at Berne, was one of the most distinguished men in the whole history of medicine. He was the founder of modern physiology.

John Hunter, born in 1728, was one of the most noted surgeons of his day, and formed the subject of the opening of the last lecture in the series. He was the founder of the school of scientific surgery. His museum at the time of his death contained 13,000 specimens.

Xavier Bichat (1771-1802) revolutionized physiology by introducing the study of the tissues instead of the organs as the foundation of anatomy, and of inquiry into the laws of life. Charles Bell (1781-1842) was a distinguished teacher and writer at Edinburgh. His works were well illustrated. He gave his attention chiefly to the nervous system.

François Majendie (1783-1858) was in many respects the contrast and complement of Bell. Marshall Hall (1790-1857), at Edinburgh, was a lecturer on the principles of diagnosis and was a copious writer on medical subjects. He discovered the reflex function of the spinal cord and the excitomotor system of nerves.

Dr. Billings concluded by saying: "It is not every or any sort of knowledge that enables one to judge wisely in the selection of a medical attendant. One reason for this is the general ignorance of the history of the evolution of medicine into its best form of the present day—an evolution in the course of which nearly every possible mode of blundering and straying from the true path has been tried over and over again. It is not by theories, but by long and patient observation and experience that we come to know of the practice of medicine, and it is only the man or woman who has by long study, based on careful preliminary education, mastered the results of all this work, who is to be trusted as your physician."

VICTIMS OF THE RECENT BLIZZARDS IN THE NORTHWEST ASPHYXIATED BEFORE FREEZING.

Dear Sir:—There is an amount of evidence and a combination of circumstances sufficient to show that the greater number of the several hundreds who lost their lives in the recent great "blizzard" of the Northwest perished from asphyxia and not by freezing. Many of the bodies, when found, were in the position of grasping or clutching at their own necks or throats. In-door witnesses describe the atmosphere as having an appearance of density and darkness, similar to that stated by divers as existing when submerged with their armor in deep water. Many that escaped describe their peril as being from loss of breath or suffocation.

The terrific hurricane force of the wind, loaded with falling snow—the latter being by a fall of temperature whose degree and suddenness has no recorded parallel converted into dry crystals, and thence by the gale ground to a fine dry ice-dust—these conditions produced a state of the atmosphere as unfit for respiration and aeration of the blood as is water for warm-blooded animal life. The extent of the fatality resulting from this storm, also its horrors, will never be fully known. For reasons evident and natural the papers of the region effectually suppress and underrate the actual truth. Your correspondent, while just outside the belt of the storm's fatality, is sufficiently contiguous to obtain information and facts in verification of the views given. The remains of several resident victims have been returned to this locality for interment; persons absent upon business or visiting when overtaken by the storm.

The Signal Service Office reported a falling barometer and severe storm at the same hour upon this memorable day, over an area whose extent far exceeds that of any upon its records. From Montana to Cincinnati, Ohio, and St. Paul, Minn., to St. Louis, Mo., was the storm field, whose centre was stated as near Des Moines, Ia. Here we have a cause for results as exceptional as itself. Yours respectfully,

H. C. MARKHAM, M.D.

Independence, Ia., February 8, 1888.

BOOK REVIEWS.

THE RULES OF ASEPTIC AND ANTISEPTIC SURGERY. A Practical Treatise for the Use of Students and the General Practitioner. By ARPAD G. GERSTER, M.D., Professor of Surgery at the New York Polyclinic; Visiting Surgeon to the Mount Sinai Hospital and the German Hospital, New York. 8vo, pp. xi, 332, with 248 engravings and 3 chromo-lithographic plates. New York: D. Appleton and Company. 1888. Chicago: W. T. Keener.

"The object of this volume is a systematic, yet practical presentation of the Listerian principal that has revolutionized surgery within the last fifteen years." This object the author has been careful to

keep in view throughout the whole book. The volume is not a treatise on operative surgery—and for this we thank the author—nor is it a collection of rules for the preparation and application of surgical dressings; of such works we have a sufficient quantity. The book may be termed a treatise on operative surgical physiology and pathology, if there be no contradiction in this combination of words. Or, it may be said that the book is a series of illustrated sermons on the text: *The surgeon's act determines the fate of a fresh wound, and its infection and suppuration are due to his technical faults of omission and commission.* And this text is elaborated in the fullest possible manner, but without unnecessary repetition or verbiage, and without any attempt to prove what are now to be considered self evident propositions in surgical treatment. The book is not written for those that blindly cavil at Listerian principles; that would be indeed labor lost. It is full of instruction, but meagre of controversy.

The primary healing of a fresh wound is now to be looked upon as a matter of course rather than as a curiosity or a piece of "good luck." Surgeons that have accepted and acted upon the great Listerian principle have now reached the solid ground of *asepticism*, which lies a step beyond the equally solid ground of *antisepticism*. And it is since they have established themselves upon the firm basis of *asepticism* that they have seen their scope of work widen into fields into which formerly it was dangerous to step. With this extension of the safe-ground of surgery there has been a fruitful development of operative technique.

We have said this much for the purpose of showing the design and scope of Dr. Gerster's excellent book without copying the table of contents, and without quoting extensively from the pages of the book. And if the reader will broaden his conception of the meaning of the title of the work, until the words "Aseptic and Antiseptic Surgery" imply to him all that they can possibly mean, he will have an idea of the object and scope of the work; but until he sees it he will have but a limited idea of its value. The vast majority of the illustrations are made from photographs, and convey an accurate idea of what they are intended to show. W. G. E.

NASAL POLYPUS with Neuralgia. Hay Fever, and Asthma in Relation to Ethmoiditis. By EDWARD WOAKES, M.D., Surgeon to the London Throat Hospital, etc. With Illustrations. 8vo, p. xii, 140. Philadelphia: P. Blakiston, Son & Co. 1887. Chicago: W. T. Keener.

This book is the outcome of a series of investigations that the author has been at work upon for several years. Starting from the observation that in some cases of ear disease there was a catarrhal accompaniment in the nose, that the middle turbinated bone frequently became enlarged, and that the swellings gradually put forth from their surfaces reddish granular masses, which in time became larger, he noticed that these superficial granulations showed a tendency to develop into mucous polypi. This may be regarded as the germ upon which Dr.

Woakes has built up his theory and his book. Two years ago he published as much as then rested on what he considered a firm clinical and pathological basis; and while his views have found objectors, the facts presented have not been contravened.

A useful suggestion for nasal surgeons is the blank diagram for indicating the condition of the nasal fossae, from anterior and posterior aspects.

One cannot read this book without being impressed with the facts that the author writes from careful study and rich experience, and that if he has not unearthed the truth he has at least come nearer to it than any other writer on this subject.

IRREGULARITIES OF THE TEETH AND THEIR TREATMENT. By EUGENE S. TALBOT, M.D., D.D.S., Professor of Dental Surgery in the Woman's Medical College; Lecturer on Dental Pathology and Surgery in Rush Medical College, Chicago. With 152 Illustrations. 8vo, pp. xi—163. 1888. Philadelphia: P. Blakiston, Son & Co.; Chicago: W. T. Keener.

It may be safely predicted of this book that it will be very favorably received by those members of the dental profession that look upon their profession as a "science and art" and not as a mechanical trade. In the first part of the book the anatomy and physiology of the irregularities of the teeth are considered. The second part is devoted to the various means and methods of treating irregularities. The book is written in a concise style, is well printed, and profusely illustrated.

Report of Special Committee on Dietetics.
Consideration of proposed amendments to the Constitution.

Announcement of Nominating Committee.

THIRD DAY, MAY 10, 10 A.M.

Report of Committee of Arrangements.

Address on General Surgery, by E. M. Moore, M.D., of Rochester.

Report of Committee on Rush Monument, by A. L. Gihon, M.D., Chairman.

Report of Treasurer, R. J. Duglison, M.D.

Report of Librarian, C. H. A. Kleinschmidt, M.D.

Report of Committee on Necrology, by J. M. Toner, M.D., Chairman.

FOURTH DAY, MAY 11, 10 A.M.

Report of Committee of Arrangements.

Address on State Medicine, by H. P. Walcott, M.D., of Boston.

Final Report of Nominating Committee.

Report of Standing Committee on Meteorological Conditions, by N. S. Davis, M.D., Chairman.

Report of Special Committee on Criminality of Feticide and Measures for its Prevention.

Report of Special Committee on Duties commonly exercised by Coroners.

Reports of Secretaries of Sections.

New and miscellaneous business.

The Sections will meet each afternoon at three. A fuller programme, including a list of papers to be read at the Sections, will be published about April 7.

ASSOCIATION ITEMS.

NECROLOGY.

Programme of General Sessions of the Meeting of the American Medical Association to be held in Cincinnati May 8, 9, 10 and 11, 1888.

The General Meetings will be held in the Cincinnati Music Hall and the Sectional Meetings in adjoining rooms in the same building.

FIRST DAY, MAY 8, 11 A.M.

Meeting called to order by Dr. W. W. Dawson, Chairman of the Committee of Arrangements.

Prayer.

Address of Welcome.

Announcement of Programme of entire Session.

Annual Address by President A. Y. P. Garnett, of Washington.

Call for volunteer papers and their appropriate reference.

New and miscellaneous business.

Notification for the appointment of the Nominating Committee.

SECOND DAY, MAY 9, 10 A.M.

Report of Committee of Arrangements.

Address on General Medicine, by Professor Roberts Bartholow, of Philadelphia.

Annual Report of the Board of Trustees, by J. M. Toner, M.D., Chairman.

EDWARD FLINT, M.D.

Dr. Edward Flint died May 30, 1880, in Leicester, Mass., the place of his nativity. He was descended from an honorable ancestry, the first record of the family in this country being of Hon. Thomas Flint, who came from Derbyshire, Eng., to Concord, Mass., in 1638, "possessed of wealth, talents and a Christian character." From him presumably come all of the name in this region. His great-grandson was Dr. Edward Flint, who located in Shrewsbury, Mass., in 1756, a surgeon and physician of repute in his day. His son was Dr. Austin Flint, who at the age of 17, was a soldier in the Revolutionary army, subsequently toward the close of the war, a surgeon stationed at or near West Point, and present at the surrender of Burgoyne. He had two sons who were physicians, Joseph H. and Edward, the subject of this notice. The former was father of the late Dr. Austin Flint, of New York.

Dr. Edward Flint was born in Leicester, where he lived and died at the age of 90 years and 6 months. His medical life extended over a period of more than half a century, during which time it was said of him, "that he was known to every man, woman and child around, trusted in his profession, and respected as a man to an extent rarely exceeded." He never sought public distinction, but was made the

careful discharge of professional duty the chief object of life, and pursued it with conscientious fidelity, regardless of personal comfort, till compelled by the infirmities of age to relinquish.

He was a life-long member of the Massachusetts Medical Society, at one time its Vice-President, and for many years one of its councillors. He was likewise an early member of the American Medical Association, from 1848, retaining membership therewith for many years. His death resulted from apoplexy, quite speedily proving fatal.

There is one fact in the history of this former almost unique, I believe, which is, that the late Dr. Austin Flint, of New York, and T. S. Flint, of Massachusetts, make the fourth generation in successive line from the first Edward Flint, who have followed the medical profession, while the present Dr. Austin Flint, of New York, is the fifth.

EDWARD BARTON, M.D.

Edward Barton, M.D., was born in Orange, Mass., Feb. 5, 1803, and died at South Orange, May 7, 1880, at the age of 74. He was the son of Pearly Barton, M.D., and direct descendant of Samuel Barton, of Colonial times, who in 1690 resided in Framingham, Mass. He was chiefly a self-educated man, though he attended the district school, and later the academies of New Salem and Deerfield. He studied medicine with his father, and attended lectures at Pittsfield, Mass., graduating first in his class, according to the testimony of Professor Parker, at Woodstock, Vt., 1831, at 25 years of age. His expenses he paid by teaching school, winters.

Commencing practice at Sullivan, N. H., after four years he returned to Orange. Here he remained three years, when he went to South Orange. His intellectual capacities were of a high order, he had keen perceptive faculties, was investigating, discriminating and a hard worker. His judgment was remarkably good, his convictions firm; he was honest, kind and courteous to all; the welfare of his patient was always first in his mind. In consultation at the bedside, all looked with confidence to him and valued his decision.

He became a member of the American Medical Association in 1858, and attended meetings in 1860, 1863 and 1865. Since 1841 he was a member of the Massachusetts Medical Society, and since 1852, a member of the Franklin County Society, holding office in each; was President of the latter Society in 1860 and 1861; was honorary member of the Worcester North Medical Society and was one of the founders and the first President of the Miller's River Medical Society.

MISCELLANEOUS.

COOK COUNTY HOSPITAL, CHICAGO. PUBLIC EXAMINATION TO FILL VACANCIES IN HOUSE STAFF.

Notice is hereby given that a competitive examination will be held at this institution March 1 and

2, 1888, for the purpose of selecting eight physicians to act as Hospital Internes.

The examinations will be in writing and upon the following subjects: (1) Anatomy, (2) Physiology, (3) Materia Medica and Therapeutics, (4) Chemistry, (5) Practice of Medicine, (6) Surgery, (7) Obstetrics and Gynecology, (8) Pathology, (9) Ophthalmology and Otolaryngology.

By resolution of the Executive Committee of the Medical Board, candidates must be graduates of a regular medical school recognized by the Illinois State Board of Health or within four (4) months of graduation from such a school.

DENSLOW LEWIS, M.D.,
Secretary of the Medical Board.

NEW YORK STATE MEDICAL ASSOCIATION—*Fifth District Branch.*—The next meeting of the Fifth District Branch will be the fourth annual meeting to be held in Brooklyn, on Tuesday, May 22, 1888. There will be a morning and an afternoon session. All Fellows are solicited to contribute to the meeting, either by reading papers, notes or communications, or by exhibiting specimens. All papers offered are the property of the Branch, and will be published in a current medical journal. The Secretary desires to be notified of the title of any paper to be offered as early as convenient.

E. H. SQUIBB, M.D., *Secretary.*
P. O. Box 94, Brooklyn.

PROFESSOR ASA GRAY, the distinguished botanist of Harvard, and one of the best known scientists in this country, died on January 30, at his residence in Cambridge, Mass., at the age of 78 years. Dr. Gray was a graduate in medicine, but after a very short experience in medical work entered upon the study of botany and became, perhaps, the most distinguished of American botanists.

NEW BOOKS RECEIVED.

The Rules of Aseptic and Antiseptic Surgery. A practical treatise for the use of students and the general practitioners, by Arpel G. Gerster, M.D. Illustrated with 258 engravings and three chromo-lithographic plates. D. Appleton & Company, New York.

Transactions of the Ohio State Medical Society, 1887.

The Rectum and Anus, their Diseases and Treatment, by Charles B. Bell. With 54 illustrations and 4 colored plates. Philadelphia: Lea Brothers & Co.

Transactions of the American Dermatological Association at the eleventh annual meeting held in Baltimore, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM FEBRUARY 4, 1888, TO FEBRUARY 10, 1888.

Major Jno. H. Janeway, Surgeon; Capt. Wm. E. Hopkins, Asst. Surgeon, detailed as members of the Army Retiring Board in San Francisco, Cal., convened by S. O. 168, A. G. O., July 22, 1886. S. O. 28, A. G. O., February 4, 1888.

CORRIGENDA.

HYDROFLUORIC ACID IN PHTHIRIASIS.—In the letter of our London correspondent, published in THE JOURNAL January 14, 1888, directions are given to pass a current of air "through a fluid composed of 100 grams of hydrochloric acid and 300 grams of distilled water." Of course the name "hydrochloric acid" should have been *hydrofluoric acid* instead, as the context clearly indicates.

ROLL OF PERMANENT MEMBERS.—The name of H. Z. Gill, M.D., El Dorado, Kansas, should have been on the roll of permanent members of the American Medical Association as published in THE JOURNAL December 31, 1887, he having been a member since 1876.

The name of Dr. W. F. Glenn, of Nashville, Tenn., is printed incorrectly as J. W. Glenn. The name of Dr. H. J. Warmuth, of Smyrna, Tenn., was omitted from the list.

THE
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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

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CHICAGO, FEBRUARY 25, 1888.

No. 8.

ADDRESS

ON

THE IMPORTANCE AND ERADICATION OF
SYPHILIS.

*Delivered before the Rocky Mountain Medical Association,
June 5, 1887.*

BY HORATIO R. STORER, M.D.,

OF NEWFORD, R. I., PRESIDENT OF THE ASSOCIATION.

LADIES AND GENTLEMEN OF THE ROCKY MOUNTAIN
MEDICAL ASSOCIATION:

In accepting the honor that you so kindly conferred upon me at St. Louis, the Presidency of our Association for the present year, I had hoped that I should be able to attend the Chicago meeting, for I appreciate your courtesy and fully share in your desire that the annual convocations of those who crossed the continent together in 1871, should increase in interest the nearer we approach that final passage into an unknown country that is before us all, and from which there is no return.

It seems to me that the older we become, self-limited as is our organization, and by its constitution unable like almost all other societies to take into itself any new or younger life, the more incumbent it is upon us to appreciate that each year our circle, already so limited through the decease of valued associates, contracts still closer upon itself, and thereby we are pressed into a more intimate companionship with each other, a nearer touch. Besides this, if more perfect union should give greater strength, to each as to all, we ought, I think, to feel with the increased sense of mutual sympathy and support that we possess as the effect of the tie of close corporationship, which is to be broken only by the decease of the last survivor of our number, that there are duties, correlative to the occasion that first united us, and as peculiar responsibilities to be measured only by the opportunities of exerting a deep public influence, that are yearly our own through our connection with the American Medical Association, as an integral part of its history.

The trip to California, pleasurable and health giving though it was to all of us, was undertaken for a more serious reason, and produced a weighty result. To many of us it was attended by much inconvenience and to all no slight expense, in both respects fully equalling indeed a summer's trip to Europe. The journey was in truth a mission; to convey the influence and authority of the National

Association to a portion of the country that, rich as it might be in natural wealth, was yet in the regard referred to, virtually a professional wilderness. Practitioners there were there in abundance, graduates from the chief schools abroad as well as from our own, and already they had rival medical colleges and even journals. But as a whole, the physicians of the Western Coast were dissociated from each other, personal feuds were intense, empiricism was aggressive, and associative efforts for the common welfare were as yet limited, if not almost unthought of. The City and County Hospital of San Francisco was already known as affording remarkable facilities for studying affections depending upon the peculiar physical characteristics of the State and its still more novel mercantile and social as well as climatic phenomena. Mountain fever was to be found in its wards, no less than all the major aneurisms, while at the Insane Asylum at Stockton, which I visited with Dr. Scott, of San Francisco, there existed under Dr. Shurtleff's wise classification, an abundance of, to us of the East, unusual mental aberrancies. There was at once a fertile field for our study, and a rich realm for us to assist in bringing within the influence of the National Association.

The hearty reception that we received from our professional brethren, the cordial welcome from State and civic authorities, and from all the people to their private homes, is still as fresh in our minds as though it were but yesterday, and we are all conscious that while as a body the American Medical Association left its impress for good upon the State of California, we ourselves without exception became subject to influences which not only freshened our spirits and expanded our ideas, but opened our very selves to ways of thinking, to aspirations, charitable judgments, and tender and affectionate relations with that people of the far West, which we shall all carry with us, enduring and undimmed, throughout our lives.

Most intimate, however, of the ties that we then formed, warmest in sympathy and fraternal interest, because shared in by each and every one, is that of the members of our circle with one another. In the joys of each there should be a general participation, in the sorrows of each a common grief. Greater still is the influence felt when an occurrence of importance affects us collectively and as a whole. It is, therefore, with heartfelt emotion that I have to announce to you the recent decease of our most venerable associate, our patriarch, Dr. John Wadham Russell, of

Mt. Vernon, Ohio, who died on March 22, 1887, in his eighty-third year, at his home.

Dr. Russell was a successful practitioner, especially as a surgeon, and was noted for his skill in removing vesical calculus. Indeed it was said of him by our biographer, Dr. Toner, that "he had performed as many, if not more, capital operations than any inland town surgeon in Ohio." Repeatedly offered a college chair, he preferred the less prominent but no less responsible duties of private life. He had studied his profession in South Carolina, at Yale College, the Berkshire Medical College, and at the Jefferson, in Philadelphia. He was, therefore, *nullius in verba magistri*, but from having been taught by numerous instructors, he had received a broader impress. He was a member of the Medical Society of Knox County, Ohio; of the State Medical Society, since its organization, and its President. He had been President of our own Association during its eleventh year, 1881-2, and delivered the Anniversary Address at St. Paul. He had also acted as President at the annual meeting of the previous year, at Richmond. At the meeting of 1883, at Cleveland, he is recorded as having made very impressive remarks, during which "as the most aged member of the Association, he dwelt upon the uncertainty of life, and the possibility of his soon being called away from his labors, and he admonished all to be ready for the great summons" which he has now, full of years and of honors, himself in person answered. A brief but feeling notice of the deceased was given by our Ex-President Davis, in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, for April 2 last (page 381), and in the same journal for April 9, there were printed the obituary resolutions of the Knox County Medical Society, concerning their late member (loc. cit. page 419). Interesting biographical sketches of Dr. Russell will be found, by Dr. Wm. B. Atkinson, Permanent Secretary of the American Medical Association, in his volume upon the Physicians and Surgeons of the United States, Philadelphia, 1878, p. 242, and by our colleague, Dr. Toner, in his work upon the history of our own Association, pages 346 to 349. A good man has fallen. We shall ever cherish his memory. May he rest in peace.

In seriously deliberating what I should speak to you of upon the present occasion, it was clear that my topic, however I might select it, should be at least connected with our Rocky Mountain pilgrimage. It was as evident also to me that my subject should be of equal importance with our then mission, and though to offer you such, instead of mere reminiscences of our pleasant travel together, but increases the difficulties of my task, I have felt that in your behalf I had no right to evade the responsibility, lose the opportunity, or make light of the important duty, each of which considerations, as I have already said, is at our annually decreasing gatherings peculiarly incumbent upon the members of the Rocky Mountain Medical Association.

While the subject of this address was still undetermined in my mind, I received from Dr. Rohé, Chairman of the Section on State Medicine, of the American Medical Association, the request that I would

read a paper upon some matter within its scope, at the Chicago meeting, and though I replied that to do so in the usual manner was impossible, so completely was my time occupied by the preparation of a paper for Dr. Bell's *Sanitarian*, upon the "Medals, Jetons and Tokens illustrative of Sanitation," a second chapter of the series that I began by the "Medals of Obstetrics and Gynecology," published in November and December last in the *New England Medical Monthly*, as a part of my proposed work on the "Medallic History of Medicine," Dr. Rohé's letter has yet settled my decision regarding the topic I should present to you. Old men and aging women, as are we doctors and doctors' wives of this Association, have a valid right to give counsel. It is for our children in the profession to carry our views into practice. The higher and more universal our theme, the greater its claim upon their attention and assistance.

In asking your attention, therefore, to a brief statement of the permanent importance and progressive eradication of that bodily disease, by common consent acknowledged as the worst of all, I am recognizing the constantly increasing tendency of our profession towards preventing both public and private pestilence, which for a thousand reasons is so much better than permitting their foothold and then in vain, perhaps, attempting a cure. In what I shall say, I am virtually still further developing a paper that I read to the American Medical Association in 1878, and was published in its transactions, and I am securing your cooperation in a movement for the protection of Society from injury as fatal to its health and indeed its existence, as it is destructive to its morals. You will find, I trust, that repulsive as is the subject, it is yet one that can legitimately be brought before a refined circle like that of even our own lady members without any violation of propriety, and be quite sure to awaken them to take part in the preservative crusade to which Gross, Marion Sims and Gihon have given so great vitality.

That my choice of subject is singularly appropriate for your consideration will be evident for still another reason. In addition to the motives that we had in common for our transcontinental journey, in my own instance there was still another. I had been invited by the State Board of Health, of California, to deliver it an address upon "Female Hygiene." This was given, and perhaps attended by some of those now present, at the State House, in Sacramento, on April 28, 1871, and repeated, by request of the physicians of San Francisco, in the latter city upon May 25. In the course of that lecture, which was published in the First Biennial Report of the California State Board of Health (1871; appendix, pages 1 to 17), I alluded with some warmth to a statement that had appeared in the Transactions of the Third Session of the Medical Society of California. It ran as follows: "In no place of civilization do the causes (of ill health among women) exist or prevail to the same extent as in California." These causes, it was claimed, were chiefly "the yielding to the seductive allurements of dissipation. This applies," it was further stated, "equally to the married and unmarried; and so gen-

eral is it that I believe," said the writer quoted, "that I am correct, when I estimate two in every three females (in California) who have reached 15, to be victims of this dissipation." (*Loc. cit.*, 1858, p. 133).

In reading this statement, and in carefully re-reading it, it seemed to me that it could mean but one thing, and such was the impression of others whom I consulted. I therefore stated in my address at Sacramento that I thought that though the remark referred to had been written by a gentleman who lived upon the spot, it must in the very nature of things have been unintentionally greatly exaggerated. My referring to the matter at all gave rise to extremely great offense, and I was bitterly criticised by the writer in question for transferring his assertions from the oblivion of a strictly professional annual, and for radically misunderstanding their drift. Though it seemed to me at the time that in neither of these respects could I have been in error, I yet cordially regret at the expiration of nearly twenty years that I wounded our friend's feelings without intention, and frankly admit that had I then known what was afterwards claimed, that the apparently very plain and direct language of his paper referred only to the late hours, the dancing parties, and if within bounds innocent amusements which we do not always hesitate ourselves to permit to the young people of our families, I should have refrained from comment. The writer of whom I have spoken holds deservedly high rank in our profession both at home and abroad as a gynecologist, and I am sorry that I was ever the means by so carelessly touching the self-inserted thorn, of causing him a moment's torture.

As a fitting sequence to what I have now said, I may mention that remaining in California long after most of our companions had returned to the East, no less time indeed than until the following October, I had abundant opportunity of studying the question that had thus early presented itself to me. I was admitted professionally into the families of many of the men of 1848 and 1849, which would have been the most likely of all to have suffered in the way indicated; I visited with the late Dr. Logan, of Sacramento, at that time Secretary of the State Board of Health, and subsequently President of the American Medical Association, the Chinese bagnios of San Francisco, at the request of the Governor of the State, and made careful inspection of their inmates; and I had abundant opportunities of observing the private clinics as well as hospital practice of my medical friends, and I was as astonished at the general good health of the people as regards specific hereditary infection, as I had been when visiting the Chinese quarter, at the vital tolerance shown by the opium drunkards.

In nothing is the conservative force of Nature, in protecting the race as a whole, evinced more clearly than in her way of eliminating constitutional taints and impurities, alike by precipitating them downwards into the grave, and upon the other hand by throwing them off as froth thro' intermarriage with a healthier strain. Were it not for this, the race would by this time have become so generally impaired as to be corrupt, physically, through and through; but we may well take comfort

if we consider what is seen in the naval and mercantile marine of this and other countries. Experts claim that there are hardly ten seamen in one hundred who earlier or later in life have not exposed themselves to specific disease. A very large proportion become affected, and yet, thanks to their good constitutions and good treatment (though often with no treatment at all, or even the very worst), how very few, comparatively, of sailors' wives and children are found constitutionally diseased. The evidence of specialists in specific disease, and of dermatologists, all goes to show that there is a terrific leaven of the kind at work in every community. They, of necessity, can take but a pessimistic view as to the future. I face to face with the sources of infection, presorted to them from distant localities, for such cases naturally consult a physician as far away as may be possible from their own places of residence, syphilographers may well declare the human race but one foul sink. Let us hope that the gloomy anticipations of its possibly becoming such, may never be realized.

Equally, however, do many of those who take a more comprehensive, because more distant view of this endemic plague of civilization, agree with the observers who study the body politic as though really with the microscope. One can hardly take up a medical journal at random without being confronted with this spectre that will not be allayed. Most forcibly is the whole question presented in a very recent number of the *Sanitarian*, by Dr. C. E. Beardsley (*Loc. cit.* March, 1887, p. 205), and as an immediate result, we find his State (Ohio) Sanitary Association unanimously recommending the passage of a law that syphilis should be made a legal bar to marriage (*Ibid.*, p. 280).

In my own paper upon "The Frequently Gynecological Origin of Inherited Forms of Strumous Disease," to which I have alluded as having been read before the American Medical Association in 1878, I drew attention to five points relative to the main question, four of which are of a general bearing, but the fifth strictly gynecological. These conclusions, then for the first time apparently so plainly stated, have not been challenged.

They are as follows:

1. Syphilis, like other toxæmias, is more proven to become constitutional in a strumous than in a perfectly healthy subject.
2. Struma, the result of syphilis, especially if from inheritance, though confessedly not uncommon, is comparatively seldom recognized as such during life, and still more unfrequently does it receive appropriate treatment.
3. Syphilitic struma, personal or by heredity, is in no sense self-limited.
4. The predisposition to syphilis by heredity (a very different thing from its inheritance), is both of itself and as affected by strumous and other antecedent dyscrasia, much more frequent and intense than is generally supposed.
5. The transference of primary syphilis being sometimes made by perfectly healthy women who are themselves entirely free from specific disease, this is an element not to be overlooked in the discussion of

syphilitic struma, as it bears vitally upon the questions, who are most prone to receive infection, how the virus is propagated, and in what way to attempt to restrain the spread of venereal disease.

I shall not at this time and in this presence do more than thus indicate the very practical directions in which, following these suggestions, both sanitarians and therapeutists may successfully move. Permit me to say, however, that while I am writing, corroborative evidence of their importance has been furnished by Dr. Wm. Henry Porter in an article in the *N. Y. Medical Record*, summarized in the *St. Louis Medical and Surgical Journal* for April 1887. Dr. Porter discusses the "Etiological Significance of Syphilis as a Factor of Disease in connection with Pulmonary Lesions," and among his conclusions are these: The pulmonary lesions attributable to syphilis are quite common, more so, however, in females than males. The disease is as frequently inherited as acquired. The lesion is most often at the apex, and generally involves both lungs. Cavities are found, and the changes are phthisical in so far that there exists progressive consolidation, followed by softening and the formation of cavities. The ultimate results of a case depend a great deal upon early recognition, before grave organic lesions have occurred.

There is reason, as I have said, to believe that the strumous diathesis renders the development of syphilitic phthisis, through direct or inherited infection, more likely to be determined. There is equal reason for the supposition that the occurrence of this latter will intensify the strumous taint—or at least evidence is as yet lacking that such is not the case. In whatever direction this may be at last determined, my own deductions will still prove true, namely:

1. That the more completely we prevent (by wise sanitation), control (by intelligent supervision), and perhaps cure (in certain cases by specific treatment), phthisis and other forms of strumous disease, to such an extent do we limit the probable infectious propagation and intensity of syphilis.

2. Similarly, the more actively we endeavor, by public and private measures other than those now indicated, to absolutely eradicate syphilis from any community, to such an extent do we limit the occurrence, personal and by inheritance, of the various forms of strumous disease.

3. *A fortiori*, and even to a greater extent than has as yet been or can be effected by governmental or private attempts to control venereal disease by examining for or treating its primary lesions, by thus removing from our midst a large moiety of the material upon which the disease has thus far subsisted, we may hope eventually to get it under control.

What I have now said, and the many practical thoughts to which it cannot fail to give rise in your minds, will be considered, I trust, to suffice for the present occasion. Brevity is universally conceded to be the soul of wit. I shall have done my duty if without tiring you, I have indicated a direction in which, whenever occasion may permit, you may conscientiously throw your whole influence towards aiding the suppression of the fearful malady which pervades the community under the least suspected

guises, and in quarters where its existence would never for a moment be imagined.

My task completed, I have to wish health, long life and happiness to you all, and many future pleasant reunions, perhaps some day even once more in California.

ORIGINAL ARTICLES.

MEDICAL WORK AMONG THE SIOUX INDIANS.

Read before the Dearborn County (Indiana) Medical Society, September 25, 1887.

BY FREDERICK TREON, M.D.,
PHYSICIAN TO CROW CREEK AGENCY.

I desire to give a brief outline of my work and experience among the Indians during the past year, hoping it may prove of interest to the profession, and that I may get suggestions that will aid me in the future.

The Indian, from constant exposure to the severe cold and extreme heat of Dakota, is liable to many diseases, often sleeping, when the mercury registers 40° below zero, on the cold ground with only a thin tipi for shelter and a dirty blanket to wrap up in; while during the summer, when the temperature reaches the extreme height of 120° F. in the shade, he exists upon the commonest food, often gorging himself with the native buffalo berries, plums, and choke cherries, and drinking the vilest water imaginable.

Consumption and Scrofula.—The first diseases to which my attention was directed, when I reached the Agency, were consumption and scrofula. Out of all the cases treated 87 have been of consumption and 30 of scrofula. Out of 57 deaths, 40 were from consumption, 4 from scrofula, and only 9 from other diseases, while 4 were accidental. Thus it will be seen that about 7 out of every 10 are dying from consumption. In my experience it has been the exception to find among the Crow Creek Indians—who are of the great Sioux tribe, and known as the Yanktonia Sioux—a good healthy subject. I find, basing my belief on the death-rate for the past year, that in less than another century this particular band of Indians will be extinct, and so far as they are concerned the great Indian problem will have been solved.

Consumption among these people appears, in the adults, always to follow an acute attack of bronchitis or catarrhal pneumonia; while usually the first symptom to which your attention is called in the child is a looseness of the bowels amounting at times to dysentery. The child grows weak, becomes emaciated, and often refuses food, while at other times it possesses a most ravenous appetite. At first the mesentery alone appears to be affected, but later on a cough sets in, dulness on percussion is perceptible over one and sometimes over both lungs, at the apex and not infrequently at the base. Mucous and crepitant râles are distinctly heard. Expectoration of a tough mucous character, and often frequent and copious hemorrhages are present. I have yet to find a case in which there was any evidence or history of

rigors. I have never seen them have a chill. The symptoms I have described are not always present. The patient sinks rapidly and dies from asthenia. While the Indian is a patient sufferer, and possesses unlimited courage and fortitude, yet he dies very suddenly and when you least expect it.

I have noticed that patients that have enlarged glands and scrofulous sores do not, as a rule, have phthisis pulmonalis. I do not consider my experience sufficient to warrant me in saying this will not happen, but my observation for the year supports the assertion.

Syphilis and Gonorrhoea.—That these people are inoculated with some specific poison one cannot question, a disease that is hereditary and may have had its origin in syphilis; and yet I have my first case of an acute attack of that disease or of gonorrhoea to see among them—a most noteworthy fact.

Pneumonia.—During the spring of the year these people have a great deal of pneumonia and the mortality is heavy. It is not an uncommon thing to see the women, when winter is breaking, sitting in the water or rolling in the melting snow.

Eye Diseases.—Conjunctivitis appears among the Indians in the spring and autumn in an epidemic form, and often of a violent type, not infrequently terminating in ulceration and opacity of the cornea. I have had as many as 50 cases under treatment at one time. From the tainted condition of their blood the disease is often obstinate and difficult to manage. I have a case under treatment now, in which a girl, Maggie Moccasin, was sent home from the Wabash School, in Indiana, as incurable and hopelessly blind. The child aroused my sympathy from the fact that she was, aside from being a very bright child, able to speak very good English. I found her in a miserable, dirty hut, unable to cross the floor unless led. I tried to get her into the school so that I could treat her, and to this I obtained the Agent's consent, but there were a great many objections to this and the idea had to be abandoned. At last I found a helper in the Rev. Mr. Bart, the Episcopal missionary, who, with his good wife, took her into their home and provided the child with every comfort and attention possible. She had complete opacity, with slight staphyloma of the left eye, while the right eye had almost a complete opacity; yet there was no bulging of the cornea. At first I thought I should perform iridectomy and make an artificial pupil for the left eye, but concluded to try treating the eyes, first with a 4 per cent. solution of atropia, and later with the yellow oxide of mercury ointment, giving her at the same time full doses of the syrup of iodide of iron. I can say that the results from the long and patient use of these remedies have been most gratifying; not only has the right eye cleared up, but the left has also been very much relieved and greatly improved. The child now seems to thread a needle and is beginning to read.

From the long severe winters I have seen a great many frost bites. I have seen any number of them with their cheeks frosted, and have treated a great many cases of frozen feet and hands.

Ulcerous Affections.—I next desire to mention a

very peculiar and annoying ulcer that is very common among these people, and that I have never seen anywhere else. The first symptom is a severe pain, usually located upon the extremities; a circumscribed pain over a spot not larger than a nickel. This lasts for about forty-eight hours, when you can feel very distinctly a small hard substance like a shot, deep down in the tissues, very similar to that found in small-pox. About the third day there is a slight flush on the surface, then a small blister appears, which is always superficial; on the second or third day after the blister appears it breaks down, and a number of others appear in the same locality. A thin sanguineous fluid is discharged, and the blisters consolidate and form one large but superficial ulcer. After a few days resolution commences, healing over without leaving a cicatrix. One person may have these for a long time; when one crop heals, another appears. I have met with the best results in the treatment of this trouble by using an ointment made of the oil of cod, with an alternative given internally.

Schools.—The schools of Crow Creek and Winnebago Reservations are now in full operation, with good sanitary surroundings. We have a boarding-school at the Agency, a Catholic Mission 18 miles northwest, just completed at a cost of \$20,000, and Miss Grace Howard's Mission, now nearing completion, is located twelve miles southeast from the Agency. This school is under the Episcopal Church, but erected by Miss Howard. It will be for returned Hampton pupils. These schools will accommodate about 400 children. The Indian child does not learn so rapidly, as a rule, as does the white child, but surely a good work is being accomplished; a work that will tend more to civilize these roaming, restless people in the future than any other one thing. My work in the schools has been the most successful; there the patients are directly under the care of the whites, and directions are carried out to the letter, but it is in the schools that I have found diseases in their epidemic forms.

Surgery.—I have not found a great deal of surgery to do, but desire to mention one or two cases that have interested me: One was a case in which a young Indian driving a reaper stopped to fasten up the trace of his inside pony. He neglected to throw his machine out of gear and, the flies being bad, the ponies started; he was caught in the sickle and his right leg nearly severed at the junction of the lower and the middle third; the fibula and tibia were both badly cut and mangled. At first I thought that nothing short of an amputation would save him, but concluded to be conservative and make an effort to save the limb. I had to treat him in a tipi on a bed made on the ground; this, however, was not a disadvantage, as it afforded him good hygiene. I made for him a rather ingenious arrangement in the shape of a camp-stool for the limb to rest in. This allowed of a free circulation of air under the injured member, gave excellent drainage, and at the same time made an admirable cushion. I used simply a wash of carbolic acid, and kept the limb in good position by means of side splints. I visited him often to see that the wound was kept clean and to look after his

condition generally. I removed a number of small spicule of bone, but the wound healed kindly and bony union took place by a provisional callus. After nine weeks of confinement I put on a brace and have him on crutches. I predict for him a fair limb and I am gratified with the results.

Malignant Disease.—I have met with but one malignant or cancerous tumor, and that was in a half-breed at Lower Brulé. He was under the charge of Dr. J. B. Graham, the Agency physician at that post. The disease was located upon the right shoulder and neck. We operated upon the patient a few weeks ago. The doctor first destroyed what he could of the growth with chloride of zinc and other caustics. We placed him under the influence of an anæsthetic, using the A. C. E. mixture, after which we cut away all we could with scissors. Then we scraped out the extensions with a sharp curette, after which we used the thermo-cautery at a white heat, cauterizing the entire surface. After this Dr. Graham used a dressing of chloride and oxide of zinc. I am informed that the wound has healed very kindly, and the patient is very much improved in general health.

Skin Diseases.—The Indian has a very delicate skin, with a very smooth surface and soft texture, which, from a lack of cleanliness, with their tainted condition, renders them highly susceptible to skin diseases. Itch is very common, and eczema, herpes and ichthyosis are often found among them. Shortly after I arrived at the Agency I was called to see "Skunk Robe," an Indian who was suffering with ichthyosis. I found him in a tipi in the grove near by. He told me he had been afflicted for some time. He was covered in places with scales, localized on the lower extremities and breast. He was quite old and a very devout Christian. I gave him internally cod-liver oil and, contrary to the advice of some authors, Fowler's solution. Locally I had him use a tar ointment and instructed him to keep clean and quiet. He went to his home on Crow Creek, about seventeen miles from the Agency, to which I frequently drove to see him. On my first visit to his home I found the disease very greatly aggravated and every imaginable space on his body covered with a dry, harsh, non-perspiratory, scaly, ill-nourished skin, showing the dark peculiar caking upon it so diagnostic of his trouble. Even the soles of his feet, as well as the crown of his head, were a mass of huge scales. I found him in a miserable old hut, dirty and illy ventilated, lying upon a cot too utterly dirty and filthy to describe. I learned that he had been in the habit of going out naked and rolling and bathing in the cold snow. To me the case was a most remarkable and interesting one, and I made that long drive a number of times to see him. I believe that if I could have succeeded in tiding him over until spring I might have, with the aid of a well ventilated tipi and the pure fresh air, at least afforded him some relief; but a new complication, in the nature of an acute attack of bronchitis, set in, due, no doubt, to the snow bath, and he died. I have to regret that I could not have brought him, with so rare a disease in such an aggravated form, before you, for you will doubtless

never see one so bad as this. He reminded me more of a large fish than of a human being.

Parasites.—These people are constantly loaded with lice, both head and body. I have not infrequently seen the women "lousing" one another and eating the vermin. Once I saw a group of dirty squaws sitting on the ground and, as there were not enough to supply all, a shaggy dog was being gone over by one of them. As they eat a great deal of raw meat they have enormous tapeworms, as well as lumbricoids and ascarides.

Medicine Men.—These Indians, to an extent, still retain their native "medicine men," who are the most remarkable frauds imaginable. They treat their patients by "pow-wow" and drumming over them and singing or chanting a most dismal song, which is a deep guttural sound and hideous in the extreme. Sometimes, however, they do administer remedies. I remember a case of conjunctivitis that fell into the hands of a "medicine man," who treated the eye by putting brass filings into it. You can easily guess the results. I have been told one of the ways by which they gain their knowledge and become "medicine men." They go on the hill-tops, and in the extreme heat lie with their faces to the ground for days, and refuse food or drink, until from exhaustion they become delirious; then it is, they claim, that a spirit comes to them in the shape of a wild animal, or sometimes it is a weed that speaks to them and sings them a song, telling them that the song will drive out certain diseases, or a certain herb will cure when administered by him. Then the man gets up and, with a drum, is a full-fledged doctor. You can always tell when they are at work, for they run up a medicine flag, red or yellow, which is to communicate with the Great Spirit, the sun or the moon, and is the fulfilling of a promise made by the "doctor" to the Great Spirit, for which he is to receive in return the restoration of the patient. The Indian believes that all diseases are the result of certain power delegated only to the medicine man. They think that consumption is produced by blowing into the system a seed of grass, and that he alone has power to heal them. They attribute headache to an evil spirit, and nothing but the drum and "pow-wow" will drive the spirit away. They believe, however, that a boil is the result of a silent shot from a duck, while a carbuncle is from the shot of a goose. When one of them gets very sick they have a medicine feast, and make medicine over the patient. I once attended a feast of this kind. The soup is made of dog; which, by the way, is considered a great luxury. They all eat while the "medicine man" beats a drum and sings or chants a most fearful and dismal ode, which is kept up for hours or until the soup is exhausted.

The Indians, as you may well suppose, are very superstitious, and if they can avoid it they never allow the patient to die in the house or tipi. If this happens they tear down the house, and never live in it again, no matter how good it is. I recall three instances in which this happened. They usually bury their dead in the ground, though some of them are placed on poles or in the trees, while others are set on the hills. Where a coffin is used they come for

it before the patient dies and, if possible, put them into it and carry them out of doors to breathe their last.

A very amusing incident occurred at the Agency some time ago. A squaw made complaint against her liege lord—who, by the way, was a "medicine man," and said he was not providing for her. He made a bold speech in his own defense, in which he said, with great pomposity: "I am better than other men; why? Because I am a doctor. I have ponies and cattle; why? Because I am a doctor. My body is worth gold; why? Because I am a doctor."

Not long since one of these medicine men called on me to prescribe for his son for retention of urine. I did so, and the boy soon recovered. I was not aware at the time that the fellow was a "medicine man," but one day he came to me and said: "My friend, my heart is very good; your medicine is good; my boy is well." I said, "How?" He then laid his hand on my arm and said he was a doctor and that I was a doctor, and we should be friends. He then shook my hand and went away.

But notwithstanding these people to some extent retain their medicine men, yet they appear to be progressing, and many of them have come to know that the white man's medicine is far superior to the mystifying, conjuring pow-wow of the Indian; and they are fast learning that the Indian doctor is a fraud. I am indeed encouraged and gratified with my work and the results. One very annoying thing, however, is that they have no idea of our plan of reckoning time, and medicine can only be given at intervals of about six hours, or three times a day, so that the physician must be exceedingly careful in what doses he prescribes and what he gives, for the Indian is liable to drink the contents of a bottle at one time.

But these people are surely progressing. When we stop to consider that only a dozen years ago they were a wild, savage race, huddled together in one large band, living in tipis along the Missouri, without an Indian house on the Reservation, and all in blankets, and that to-day nearly every one of them have their lands in allotment and are living in good comfortable houses, while many of them are clothed in citizens' dress, and are farming and getting for themselves herds of cattle and horses, we can but say that they have made a marvelous and rapid advance towards civilization; and I predict that the day is not far distant when they will be self-sustaining. With the aid of the efficient force of employes and the energetic missionaries at work, we hope for great achievements in the future.

Summary.—Cases treated in all, 790; patients visited in homes, 97; in tipis, 100. I have traveled to see sick on horseback 94 miles; have walked 97 miles; have traveled in spring wagon 1,170 miles. Births during the year, 55; deaths, 57.

September 25, 1887.

THE BURIAL REFORM ASSOCIATION of England is an organization that advocates early interment, and the use of perishable coffins to permit rapid disinfection after burial in the earth.

THE USE OF WATER IN THE TREATMENT OF RENAL AND HEPATIC DISEASES.

Read before the Northwest Medical Society, January 10, 1888.

BY E. F. ELDRIDGE, M.D.,

OF NEW LONDON, WIS.

For the past five or six years I have been much interested in the cause, pathology and treatment of the various morbid conditions of the kidneys, more particularly in that departure from the normal that is quite frequently met with in this country, especially among business and professional men, which is the direct result of the ingestion of too great quantities of carbo-hydrates in the form of fat, sugar or starch, over-stimulation of the nervous system with alcoholic beverages, the immoderate use of tobacco, excessive mental activity, worry, lack of sleep, dissipation, etc. The frequency with which our attention is called to this condition and the subsequent history of these cases, if left to themselves, is such that it should excite our deepest sympathy, and receive our most earnest attention.

In these cases irritation and congestion (which finally become chronic) of the kidney are induced by the continued excretion of uric acid, the results of imperfect digestion or oxidation of albuminoids, the straining off of large quantities of partly converted starch in the form of sugar, or of an excessive amount of the different combinations of the phosphates from the destruction of nerve tissue. Tobacco and alcohol produce the same results; the former by paralyzing the coats of the arteries, and the latter by increasing the heart's action and raising the blood pressure. The result of either is to dilate the capillaries to twice their original calibre, and produce a condition of static congestion and functional incapacity. If this condition is allowed to continue, organic lesion is the result, and either diabetes mellitus or Bright's disease is the sequela.

In prescribing for these patients it is necessary to ascertain which of the above causes is the active one in the particular case under consideration, and remove it if possible; if not, as is often the case with worry, overwork, etc., to modify its influence by the aid of proper food, hygienic surroundings and suitable remedies, so as to reduce its injurious effects to a minimum.

The great struggle going on at the present day among professional and business men for the leading position in their respective callings is the result of a firm belief in the doctrine "that the survival of the fittest is the inevitable." In regard to health and life this is not true, and should be so understood by patients suffering from any of these maladies. Errors of diet and deportment must, of course, be corrected.

The second consideration is that of the removal of the waste material, or of getting rid of the "accumulated surplus" with which the system is loaded, and which is continually undergoing a retrograde metamorphosis, the result of which is the production of highly poisonous irritants in the form of uric acid, etc. In no way can this be accomplished (so far as I know) as rapidly as by solution or hydration; in

fact, this is the *only* way with which I am acquainted, that solids in this form can be removed from the system.

In looking for a solvent for these substances, I find none that can approach the capacity of *water*, the greatest solvent known, and, reasoning from the laws of chemistry, and the actual results of experiments, those waters that contain the smallest amount of salts, are capable of dissolving and holding in solution the greatest quantity of solids, and particularly those represented by combinations of lime, uric acid, etc.

I am thoroughly convinced that any and *all* waters that are in fact what they purport to be, *i. e.*, waters containing an unusual amount of mineral substances, are far inferior to those that are comparatively free from salts of all kinds.

While in practice in Boston I was in the habit of prescribing in these cases "Commonwealth Water" from the famous spring of that name situated near Waltham, Mass., that is a very pure water containing about 35 grains of solid ingredients to the gallon. I found this superior to any of the much vaunted waters of a higher specific gravity, for the simple reason that it was not already saturated or loaded with solids in solution.

Early in the spring of 1883 I located in my present city, New London, Wisconsin, and the following season, after assuring myself of the feasibility of the undertaking, succeeded in inducing some of my neighbors to join with me in sinking an artesian well. The enterprise was successful, and for the past three years the inhabitants of our city have been enjoying the privileges of some twenty flowing wells that furnish thousands of gallons per day of the purest natural water that I have ever used, it containing less than 25 grains of mineral substance (about one-half of which is chloride of sodium or common salt, and the remainder largely magnesia, with a small amount of lime and potash; not any of which in such very small quantities are objectionable) to the gallon, without a trace of organic matter. This water is also highly charged with static electricity or magnetism.

Since this water became the common beverage I have been surprised and gratified to note the rapid improvement in patients suffering with chronic disease either of the liver or kidneys, and the almost entire absence of acute hepatic or renal disturbances. My serious attention was first called to these facts by the continued failure to report at my office of a number of patients that had been under my care. When questioned in regard to their absence, they replied that they had been drinking fountain water, and felt so much better that they did not need medicine. After carefully studying a large number of cases of kidney diseases and gouty tendencies in those who had been using a thorough course of these waters, and witnessing their rapid improvement, I am positive that the opinion expressed by my patients was well founded and in the main absolutely correct. In other words, I believe that a large majority of these cases would make a rapid recovery if they would correct *all* the errors of their mode of living

and drink freely of *pure water*, *i. e.*, that which contains the smallest amount of solids, and of course *no* organic matter.

Sometimes these patients are anæmic and require the exhibition of ferruginous tonics or other reconstructive, represented by some form of phosphorus, cod-liver oil, bark, etc. Others may be suffering from some specific taint that will indicate alteratives in the form of the iodides, stillingia, hydrargyrum, etc., *i. e.*, the appropriate medication. I do not wish to be understood as condemning the employment of medicine in its proper place; far from it. What I *do* wish to emphasize is this: in these cases the most effectual way to rid the system of its accumulated load of waste material, and one that will not prevent the employment of any other, is to thoroughly *wash* the *entire* system (not simply the outside, until they appear like whited sepulchres, which indeed they are, full of dead men's bones and all uncleanness); but the inside as well, and at the same time stop their production and subsequent accumulation by the use of proper food, the observance of regular habits, with the continued ingestion of a sufficient quantity of pure water.

After a careful and quite extensive examination of its source, the different strata of sand through which it passes for more than twenty miles, the absolute impossibility of its contamination, from the fact that the vein is tapped at a depth of not less than 150 feet (the drill passing through three deposits of clay that are impervious and insoluble, the aggregate thickness of which is 75 feet), and the absence of mineral deposits which might affect it, with a careful analysis, and the results of clinical experience, not a single case of malarial or typhoid fever or any zymotic disease having developed for the past three years among any of those who were using fountain water in our city.

In view of all of these facts I am thoroughly convinced that it would be difficult, if indeed not impossible, to produce a water (either as a preventive or as a remedy in all hepatic and renal diseases, and especially those that are characterized by an accumulation of waste material in the system) that would equal that which is discharged from the many flowing wells of the city of New London, Wis.

A CASE OF CEREBRAL LOCALIZATION, WITH DOUBLE TREPHINING (ACQUIRED SPASTIC HEMIPLEGIA—PORENCEPHALUS).

Read before the Suffolk District Medical Society,
January 11, 1888.

BY W. N. BULLARD, M.D.,
OF BOSTON.

The case I have the honor to report to you to-night derives its chief medical interest from the fact that the diagnosis of the lesion, and the localization of its seat were correctly made during the life of the patient, and that the latter was such as could be easily reached by a comparatively simple operation. Cases of operative interference in congenital cerebral lesions, or in those occurring in the earlier months of

life, are very rare, and I, therefore, believe it of importance that the possibility of localizing these lesions, and the probability that in certain cases, even though they be incapable of cure, their results can be mitigated, should be strongly emphasized. Until of late years, but little attention has been paid to the various forms of congenital or infantile cerebral lesions, excluding hydrocephalus and inflammations of the meninges. Patients suffering from congenital or infantile cerebral paralyses are too often considered not only absolutely incurable, but incapable even of improvement. Some cases unquestionably are so; but on the other hand, I believe that in many of this class of cases we can do much to improve and mitigate those symptoms which we cannot remove, and there is no doubt that a broad field lies open here for cerebral surgery, provided only that the neurologist can state with some degree of precision the condition existing within the cranium, and if the lesion be a localized one, point out its seat.

The present case occurred in the service of Dr. Bradford, at the Children's Hospital, and it is through his kindness and at his suggestion that I bring it before you to-night.

The patient was a boy, $4\frac{1}{2}$ years old. There was no history of any nervous disease in the family, and no history of the patient was obtainable, except that he was supposed to have been in his present condition since birth. The delivery was by forceps, and the child had a scar and depression over the right parietal bone, supposed to have been caused by them. There was no history of convulsions at any time. The child was brought to the hospital by his parents, who insisted upon an operation—trephining over the depression—although they were informed that there was little hope of improvement from what they desired, and still less of cure. This operation had been decided upon before I saw the child.

I first saw the patient at the hospital on the 22d of June, 1887, when his condition was as follows:

The child was seated in bed. As a rule, he sits quietly all day, doing nothing. Expression vacant. Intelligence limited, although he has a certain sense of his surroundings, as was shown by his screaming one day when he was placed in a bed in another part of the ward, and pointing with his finger to the old one, and continuing this until he was replaced. He understands simple words and sentences, and obeys simple directions. He signifies when he is thirsty. When told to do so, he will turn his head, and he will hand an object to a person, or smell of a rose, when it is suggested to him. He can say "yes" and "no," and will say "good-bye" when any one is going away, but he cannot talk. He drules constantly.

Physical condition: Well nourished, well developed. Head large, rather square. On the right side, 5 cm. behind, and about 4 cm. above the upper edge of the anterior border of the pinna, there is a scar 5 cm. long, extending forwards and slightly upwards. This scar lies in front of the occipito-parietal depression, which is alike on both sides, and seems to cross the temporal ridge of the parietal bone, and the squamoparietal suture. On palpation, there is an irregular knob or prominence under one portion of the scar,

and a depression with irregularities on each side; that is, anteriorly and posteriorly. There is no decided tenderness here or elsewhere about the head. Nothing else abnormal was detected about the cranium.

All the special senses appear normal. There is right internal strabismus. Eyes not examined ophthalmoscopically.

Nothing abnormal could be detected about the trunk or organs of the thoracic or abdominal cavities. There was an occasional reduplication of the first sound of the heart.

The spine was straight; no tenderness in the back. The patient cannot use any of his extremities, but he uses those on the left much better than those on the right.

Upper extremities: The right upper extremity can be moved somewhat, but is never used. It is in a condition of spastic paralysis. The fore-arm is held semi-flexed upon the arm, and there is considerable resistance to passive motion, which can, however, be overcome after a time. The hand is firmly flexed on the forearm. He will not grasp anything with the right hand. He moves the left upper extremity much better than the right, and always grasps objects with the left hand, and then holds them firmly.

Lower extremities: The right lower extremity is smaller, and possibly colder than the left. There is a spastic condition of the knee and ankle. The foot is held flexed in the equinus position, with the toes pointing downwards. Some movement of the limb, however, is possible. He can flex at the thigh, knee, and ankle when he wishes. The left lower extremity is somewhat weak, perhaps from disuse; otherwise, nearly normal.

Knee-jerk exaggerated on both sides. Patient is unable to walk or to stand without support. He can take a step if supported under the arms, and he can hold his weight on the left leg. If the legs become locked at the knees, as they tend to do, he can support a portion of the weight of his body upon them. The sensation is apparently normal everywhere throughout the body. Nothing else abnormal detected.

To resume the case in short, we have here a boy, four and a half years old, with much diminished intelligence, inability to speak, inability to use any of his limbs well, and with right internal strabismus and right spastic hemiplegia. In addition, there is a well-marked cicatrix and depression in the right posterior parietal region.

After examination of the case it was decided, at my suggestion, that in addition to the operation already proposed, the cranium should be opened over the cortical motor area of the left side, as this seemed to offer the strongest prospects of relief.

The operation was, accordingly, performed on the 27th of June, by Dr. Bradford. The patient being etherized, the various points were localized on the shaven head, and the position of the fissures of Rolando determined as carefully as possible. Dr. Bradford trephined first on the right side of the head, directly over the cicatrix. A curved incision with its convexity downwards, about six inches in length, was

made through the scalp, the periosteum was removed intact, and the cranium trephined—the trephine used being an inch in diameter. The outer table of the portion of bone removed showed a fracture, and the inner a slight inequality, due to a fissure. The dura mater exposed was thickened, and its vessels filled with blood. It (the dura mater) was then incised, and the brain and pia exposed to view. There was no evidence of pressure, nor of anything abnormal here below the dura. The brain protruded slightly through the opening and pulsated. [It is important to note here the fact that, in spite of the fracture of the cranium, and the accompanying thickening of the dura mater, the pia and brain were, as far as could be told, absolutely normal.]

It was now decided that it would be wise to trephine over the probable seat of the lesion on the left side, and, at Dr. Bradford's request, I located the motor area on the left side, where it was presumable, from the symptoms, that the lesion would be found. This point was a little higher and slightly further forward than that trephined on the right, at the junction, as nearly as could be determined, of the middle and lower thirds of the fissure of Rolando. There was a very small superficial cicatrix in the skin here, not involving the deeper tissues of the scalp, and which had remained undetected until the position was marked. An incision similar to that made on the right side was now made here. The cranium, when uncovered, appeared perfectly normal. It was trephined, and, on the removal of the bone to which the dura was attached, a depression in the brain substance—porencephalic cavity—was exposed. This not only occupied the whole space directly under the opening, but also extended somewhat anteriorly. The pia seemed to be adherent. The brain substance in this depression, which was estimated as about $1\frac{1}{2}$ inches long, by $\frac{3}{4}$ inch wide and $\frac{3}{8}$ inch deep at the deepest part, was puckered and shriveled. Considerable hemorrhage from the bone followed the removal of the button on this side. This was quickly controlled by plugging.

As the patient's condition was poor—pulse very weak, and respiration slow and labored—nothing further was attempted. After replacing the buttons of bone on each side, and stitching the dura mater on the right, the incisions were sewed up, and bandages and dressing applied.

The patient, however, never rallied thoroughly after the operation, although he recovered consciousness in the evening, and was conscious until the following morning, when he died at 10 A.M., about seventeen hours after the operation. The temperature was not taken on the evening following the operation, but the next morning rose to 105° . There was no autopsy.

This case, it seems to me, illustrates some interesting points. In the first place, it demonstrates the possibility of localizing lesions of this character (porencephalic) in children in certain cases. This is, of course, the first step in any rational attempt for their direct alleviation or cure. That these lesions can be localized with moderate accuracy at least, sufficiently for all practical purposes in a large proportion of the cases of this class, I am convinced,

and I believe it to be the duty of the neurologist, so far as lies within his power, to improve and perfect his knowledge, so that, when appealed to by the surgeon, he shall be able to point out where the instrument should be directed, and to state what sort of lesion is likely to be found.

Secondly, I believe that this case may be accepted as evidence that these lesions—many of them, at least—can be reached by surgical interference without serious difficulty, since simple trephining can no longer be regarded as a serious operation in ordinarily healthy persons. If this be true, its importance is at once manifest. If these lesions can be localized, and if surgical interference in them is not a matter of serious difficulty nor of marked risk to the life of the patient, we have here at least one expedient which offers a prospect of alleviation in these cases, however remote.

It is well known to most of us, but I repeat it here for the sake of emphasizing it again, that there are no cases which, as a class, are regarded by the whole medical profession as more utterly hopeless and as more entirely beyond any possible medical aid and assistance than congenital and infantile brain affections. There is no class of cases in which the patients are more utterly useless to themselves and to the world, or more of a burden to their parents and relatives. Anything, therefore, which affords the least prospect of relief, is in them of the utmost importance.

There are two other points in this case which are of both neurological and surgical value, which I will refer to in short:

The first is the question of the advisability of trephining in more than one place at the same time in children. Whether, in this case, the result might have been more favorable had the operations been performed separately, it is impossible to decide; but in a similar case it would certainly seem more safe to perform two operations.

The second point is one which, although theoretically well known, cannot be repeated too often, and it is well illustrated here. This is that, in spite of a fracture or visible injury on one side, the actual cerebral lesion may be upon the opposite, whether produced by direct violence or by *contre-coup*. Therefore, in case of cerebral injury, if the symptoms point to a lesion on the opposite side from the trauma; for example, if the hemiplegia is on the same side of the body as the fracture of the cranium, we should not trephine at the place of fracture, but on the other side.

In the case of our patient, the probability is that the whole trouble was traumatic, and due to the pressure of forceps. While on the right the parietal bone was fractured, on the left, the bone being more yielding or the blade being in a slightly different position, or for some other reason, a different effect was produced. This was probably the rupture of the ascending parietal artery or one of its branches.

THE BRITISH NURSES ASSOCIATION is the name of an association formed in London on February 13.

THE USE OF SACCHARIN IN DIABETES.

BY CHARLES W. PURDY, M.D.,

OF CHICAGO, ILL.

HON. FELLOW OF ROYAL COLLEGE OF PHYSICIANS AND SURGEONS,
KINGSTON, ONT.

Sufficient time has now elapsed since the introduction of saccharin to permit extended observations of its physiological effects upon the organism, as well as to learn something of its therapeutical properties. This time, happily, has been improved by numerous observers, especially by Stahlman, Salkowski, Stutzer, Adducis, and Leyden, to whom we owe much of our knowledge upon this subject.

We know that this agent is absolutely innocuous to the system, even when administered in sufficient quantity to equal in sweetening power three pounds of sugar a day, and continued indefinitely. The fact that large contracts have recently been made for the supply of saccharin for military use, both by the German and the Russian governments, indicates clearly its harmlessness as a flavoring agent for food and drink.

With an agent so harmless, and possessing a sweetening power more than three hundred times that of sugar,¹ we naturally turn to diabetes as a useful field for its employment; since the deprivation of sugar—always so essential in successfully treating these cases—is often one of the severest trials to the patient in the enforcement of the diabetic dietary. Simply as a flavoring agent saccharin leaves little to be desired as a substitute for sugar, save its sparing solubility. It is of course entirely devoid of nutritious properties.

From a liberal use of saccharin in my practice since its introduction I have not yet met with a single instance in which its palatability was suggested as in the least inferior to that of the purest sugar.

The most desirable form for the use of saccharin by diabetic patients is that of tablet; since in this form a combination may be made—usually with an alkaline carbonate—which renders the saccharin perfectly soluble in water. I have made numerous trials and experiments with the several forms of saccharin tablets at present on the market, both here and in Europe. Most of these have been found quite soluble, but they contain rather an excess of saccharin which I think in some respects objectionable. From a grain to a grain and a half of saccharin will render a cup of tea or coffee about as sweet as will two lumps of white sugar; and I find that while most patients crave the flavor of sugar, some resent an excess of it, and therefore the tablet must be broken—and consequently in part wasted—in order to get the desired grade of flavor. The tablets I am now using are made for me by Parke, Davis & Co., of Detroit, and contain each 25 milligrammes of saccharin, in the shape of soluble salt, and these give entire satisfaction.

In addition to its use as a flavoring agent for food and drink saccharin possesses properties that render it valuable as a medicinal agent in the treatment of diabetes. It possesses decided antiseptic properties,

estimated by trustworthy observers about equal to that of salicylic acid and thymol. On the other hand, saccharin exerts no action on ptyalin or pepsin, and, moreover, it seems to have no secondary action on the digestive secretions—passing unchanged through the organism, to be eliminated by the kidneys, as do benzoic acid and resorcin—imparting its antiseptic properties to the urine.

In diabetes, as is well known, the necessary ingestion of a food mostly of a nitrogenous character often weakens the digestive power of the stomach and flatulent dyspepsia is the result. Now in saccharin we possess an agent that very much retards the abnormal fermentative changes in the stomach; and its tendency therefore is to preserve the food from such changes until the tardy flow of gastric juices finally reaches and digests the whole contents of the stomach—just as does carbolic acid and such agents relieve flatulent dyspepsia.

We are perhaps justified in looking for another possibly beneficial action of saccharin in diabetes, based upon its antiseptic properties, though thus far our knowledge rests mostly upon a theoretical foundation. When we consider the strong tendency to fermentative action in the blood of diabetic patients, as is evidenced by the frequency of multiple furunculus and anthrax, as well as Kussmaul's coma; we can scarcely resist the conviction that the passage of such an antiseptic as saccharin through the blood—especially in large doses—cannot but have a modifying influence upon these fermentative changes. Theoretically then at least, saccharin if given in considerable quantities might be expected to exert a most beneficial influence over those blood changes in diabetes from whence spring complications comprising the most serious and fatal features of the disease.

In brief, then, we are justified in the following conclusions in reference to the use of saccharin in diabetes:

First, that in this product we possess a flavoring agent for food and drink the palatability of which is quite equal to that of the finer grades of sugar, and which may be used by diabetic patients with the greatest impunity.

Second, that through its antiseptic properties it retards the abnormal fermentative changes in the stomach so common in diabetic patients—thus promoting digestion and relieving flatulence.

Third, that while as yet we are without sufficient practical data to judge of its blood effects in large doses to diabetic patients, yet both chemistry and physiology would indicate its use for the purpose of favorably influencing some of the more fatal complications of the disease.

163 State St., Chicago, Feb. 13, 1888.

PROFESSOR NAUNYN, lately appointed to the Chair of Medicine in the University of Strassburg, will begin his course on April 1. For his vacated chair at Königsberg the names of Strumpell, Quincke, and Lichtheim are mentioned.

¹One part of saccharin can be distinctly tasted in 10,000 parts of water.

MEDICAL PROGRESS.

ANTIPIRYN IN MIGRAINE.—DR. W. H. RUSSELL FORSBROOK has prescribed antipyrin in 100 cases of migraine. He has found that antipyrin given in 15-grain doses every twenty minutes, three times consecutively, almost invariably removes the pain, depression, drowsiness, and nausea, so that in forty minutes, frequently even after one dose, patients express themselves quite well. A single dose, if given during the premonitory signs, will often ward off an attack. The few cases that are not amenable to the speedy action of the medicine, appear to have the duration of the attack much shortened. Further, the period between the attacks has seemed to be prolonged; and succeeding attacks have not been so severe. The pulse, which is generally slowed during an attack of migraine, appears in some cases to be rendered fuller and quicker. Antipyrin, when given to young women for migraine, sometimes produces a species of intoxication, so that it is as well to be on one's guard; although, as far as his experience goes, the only result has been the almost certain and immediate relief from the peculiar pain. (*The Lancet*, December 10, 1887, p. 1163.) During the last two months, Dr. Kingsbury, of Blackpool, has treated twenty cases of migraine with antipyrin. Several of the patients had suffered for over ten years, and, finding all drugs useless, had become reconciled to being periodically prostrated for one or two days. In all the cases he ordered 8 grains of antipyrin, dissolved in water or lemonade, to be repeated every half hour, the patient lying down. Most of the cases were quite cured by two powders; the most obstinate yielded to three; in no case did the antipyrin fail. A cup of warm tea sometimes seemed to help, and the only inconvenience due to the treatment was, in a few of the cases, considerable sweating. Many of the patients could hardly credit that instead of being utterly helpless for twenty-four hours, they could now cut short an attack in one hour. Another great advantage of antipyrin is that it prevents as well as cures these attacks. One lady, who cannot remember having fewer attacks than three a month, each lasting about thirty-six hours, has been quite free for eight weeks, and this she attributes solely to the occasional use of antipyrin powder. (*Brit. Med. Journ.*, December 24, 1887.) In a letter on this subject Dr. N. E. Davies says that in the cases where he has tried it the effect of antipyrin has simply been marvellous. In one case of a lady, who for years had been the subject of most distressing periodical attacks of intense pain referred to the occiput that defied all ordinary remedies, this drug relieved at once, and the depressing fear of impending attacks disappeared. It leaves no ill effects whatever—a great desideratum. Ten grains repeated every hour for two or three hours is his plan of giving the drug, and then at intervals of six hours for a day or two after to prevent all chance of a recurrence, this generally being at the desire of the sufferer.

MR. T. J. BOKENHAM says: Antipyrin has for

the past few months attracted considerable attention in Germany on account of its astonishing action on the paroxysms of migraine. In England, however, until quite recently, the drug does not appear to have been much used in this disease. When it has been tried at all, the doses given have been large, and have in some instances been found to produce unpleasant effects. During the last two months I have had an opportunity of treating as many as twenty-six cases of migraine with antipyrin. The results have been in every case perfectly satisfactory, although the dose given has been quite small, in no case exceeding 4 grains. I will only describe three typical cases: namely that of a near relative: that of a girl, members of whose family exhibit epileptic tendencies; and an attack as occurring in myself.

My own migraine is usually brought on by over-use of the eyes, and is almost invariably preceded by well-marked teichopsia, which lasts for from half an hour to several hours. As the attack proceeds, I get a tender spot on some part of the scalp, generally on the right parietal region, a vascular disturbance, with throbbing behind the right eye. The first time I took antipyrin it was in a dose of 3 grains after the pain was well developed. In a very short time the throbbing entirely ceased, leaving only a dull aching pain behind the eye; the flushing of the face also diminished. After half an hour I took a second dose of 3 grains, and by the end of an hour from the time of taking the first dose was quite well, save for slight tenderness of the scalp. Since then I have tried the drug, in the same dose, taking it immediately the teichopsia comes on, with complete success in altogether preventing the attack.

The second case is that of a lady who has been subject to attacks of migraine for many years. The starting point of her attacks is also in the eyes. For a long time large doses of ammonium bromide were successful in cutting short the attacks, but recently this drug seems to have lost most of its power. Antipyrin entirely relieved the prostration and pain after the second dose of 3 grains.

The third case is interesting in that it points to another class of cases in which antipyrin may be of use, namely epilepsy. Here the mother is epileptic, the father is of a very excitable temperament, and another member of the family shows signs of weak intellect. In this case migraine usually follows any undue fatigue, and is attended with a good deal of prostration. I happened to be with her during one attack and promptly administered antipyrin. The headache yielded entirely after the second dose of 4 grains.

I have under observation also two epileptics, in whom the fits are preceded by a well-marked aura in the shape of tingling of the extremities of the fingers. They are directed to take, immediately they feel this sensation, 10 grains of antipyrin in a little water. If the theory of Dr. Living concerning the close pathological relation between migraine and the other so-called paroxysmal neuroses be true, there is some hope that in both these diseases we may be able to check or to cut short the attack by the timely use of antipyrin. I have not yet had the op-

portunity of observing the effect on these two epileptics, but it would certainly seem to be worth a trial.

The plan I have pursued with so much success in this series of cases is to give very small doses, contrary to the practice of most physicians, who have used as much as 15 grains repeated every twenty minutes. I feel sure that antipyrin requires only to be known to become a regular remedy in the treatment of migraine and that practitioners will use the small dose with less hesitation than they would the large ones previously given.—*The Practitioner*, February, 1888.

CAUSES OF SUBCUTANEOUS INFLAMMATION AND SUPPURATION.—GRAWITZ and DE BARY (*Archiv. für Patholog. Anat. u. Physiol. u. für klin. Medicin*, Bd. 108), report some experiments showing that the introduction of pus-bacteria into the subcutaneous tissues is not in itself sufficient to cause suppuration, but that other factors must be present to furnish a suitable condition for their growth and multiplication. In their experiments they carefully cleansed and disinfected the integument at the proposed site of injection, used a thoroughly clean needle of small caliber, and immediately closed the wound made by the needle with iodoform collodion. It was found that with these precautions large quantities of neutral fluids were absorbed after subcutaneous injection, both when sterilized and when infected with the *Staphylococcus pyogenes aureus* or *citreus* to a greater extent than the most careless experimenter would ever accidentally infect sterilized fluids. They therefore consider the wound made by the needle to be the point of danger, as the bacteria are held here, multiply, and spread through the tissues, while those in the meshes of the subcutaneous tissue are absorbed before they can do damage. In this way they explain the observation of Uskoff that suppuration was produced by the injection of large quantities of neutral fluids, and negative the assertion of Orthmann that the suppuration so produced was due to the admixture of bacteria. In some cases the integument over the injected fluid died, and in these cases suppuration occurred. Histologically, the connective-tissue cells at the site of the injection were found swollen and nuclear. When the solution had been colored with methyl-blue, the coloring could be plainly seen in the sheaths of the neighboring nerves, demonstrating that narcotic substances so injected probably exercise a local effect. Subcutaneous injections of certain germicidal irritant fluids—such as a solution of bichloride of mercury (1 to 1,000), absolute alcohol, and tincture of iodine—were followed by severe inflammation, but no suppuration unless the integument became necrotic. After successive injections of solutions of chloride of zinc, varying from 1 to 5 per cent., into the same portion of a muscle of a rabbit, a fluid impregnate with *Staphylococcus pyogenes aureus* was injected into the same place. The muscle was found disintegrated, but there was no pus. After the injection of a few centimetres of a 5 per cent. solution of nitrate of silver into a dog, an abscess was formed containing

pus, from which no bacteria could be obtained. Of solutions not germicidal, but able to arrest the development of bacteria, acids and alkalies produced no suppuration, even after the addition of bacteria, though 5 per cent. solutions of the caustic alkalies reduced the tissues to a soft hæmorrhagic mass. Injections of 1 to 4 solutions of ammonia caused the formation of pus, cultivations of which in agar agar remained sterile. When bacteria were injected with it, flourishing colonies of the same form of bacteria as those injected could be cultivated from the pus. Hence they conclude that ammonia, in sufficient concentration to cause severe inflammation and suppuration, furnishes in the subcutaneous tissues a suitable material for the growth of bacteria. Oil of turpentine they determine to be a germicide of the first rank. Instruments immersed in it for two minutes are, they maintain, absolutely aseptic, and are not injured as by solutions of bichloride of mercury and carbolic acid. Injections of this oil failed to produce suppuration in rabbits and guinea-pigs, but in dogs abscesses were formed which contained a peculiar pus with no bacteria. Small amounts of croton-oil produced fibrinous exudations, but no pus; larger quantities caused poisoning. These observations show that certain chemical substances, in the right quantity and strength, can, without bacteria, produce suppuration in certain classes of animals, or may render the tissues suitable for the growth of bacteria which, injected alone into the normal subcutaneous tissue, cannot, unaided, cause a suppurative inflammation.

A METHOD OF EXCISING THE TONGUE.—In a clinical lecture MR. RICHARD BARNWELL describes the following method: Strictly in and along the middle line an opening is made about one-third of an inch long immediately in front of the hyoid bone, through the raphe of the mylo-hyoid. The genio-hyoid and genio-hyoglossus muscles are separated with the handle of the scapula until the deep surface of the mucous membrane forming the floor of the mouth is reached. By means of Liston's needles carried under this membrane to, or even beyond, the last molar teeth, threads are passed on each side into the buccal cavity, which in their turn draw flexible wire-twist,¹ first into, then out of, the mouth, in such wise as to surround the base of the tongue as far back as one will. An écraseur working with this wire severs that part of the organ. Then the loop of another écraseur is passed between the teeth, pressed well down on the first incision, and divides the structures beneath the tongue.

The advantages are the bloodlessness of the operation, its great security against septic pneumonia, and the painlessness of the stump. The first of these is, I conceive, a very great gain. Three or four drops of blood come from the skin of the supra-hyoid wound, and only enough should be produced from the tongue to stain slightly the saliva. It is, however, right that I should tell you of an objection that has been urged against this procedure—viz.,

¹See my paper in the *Clinical Society's Transactions*, vol. xiv., p. 112.

that if in the first section by the *écraseur* any considerable hæmorrhage should occur, the bleeding vessel would be inaccessible, the tongue being yet in the mouth. The matter, however, lies entirely in the hands of the surgeon, for the fact is that unless the *écraseur* be worked with culpable rapidity there is never any bleeding worth mentioning, since no large vessels are here divided. Moreover, the tightening of the *écraseur* wire produces that very compression of the base of the tongue which Mr. Heath has shown can be effected by two fingers introduced into the pharynx, and which he points out will check hæmorrhage. I have operated by Whitehead's and by Baker's method, and have more often seen those operations performed. One of my objections to both is that an unnecessary amount of blood is lost. The former method especially requires a particularly good light, and a patient quite under æsthesia, and able to open widely the jaws—a condition not by any means always present. Moreover, neither of these operations provides for draining the cavity; therefore foul saliva and pus accumulate at its back and in the fauces, is even apt to dribble down the larynx, and at least infects the passage through which the breath passes to the lungs. In my operation the supra-hyoid wound forms, if the patient's head be slightly raised, the funnel-like bottom to a cavity perfectly drained through that opening. I have never found it followed by septic pneumonia, and am glad to hear my patients complain, as they always do, that the mouth is dry. It has also been urged that this method does not provide for excising diseased glands. Well, that is true both of this and of the other two procedures I have mentioned. Superficial glands must be removed separately; the only plan which is adapted for the removal of the tongue and of deep glands is Kocher's exceedingly severe operation.

And now about the painless condition of the stump. The chief, if not the entire, tactile sensibility of the tongue is derived from the gustatory branch of the fifth, for this sense in the glosso-pharyngeal twig is very dull and obscure. The lingual gustatory reaches the tongue by passing down on the ramus of the lower jaw, and division of it in that part of its passage is a device for rendering the organ insensitive. Now the first cut of my *écraseur* divides these nerves from the point where they leave the jaw, or more often the wire does not cut them, but isolates them, leaving them as branched white threads loose in the mouth, in which case they are to be snipped off with scissors close to the bone; either way the stump has no sensory nerve, and thus is painless, to the great comfort of the patient.—*Lancet*, Dec. 31, 1887.

USES OF CANNABIS INDICA.—SURGEON-MAJOR J. F. P. McCONNELL, of the Bengal Service, in an article on this subject in *The Practitioner*, of February, 1888, speaks of some uses of cannabis indica that do not seem to be generally known. One of the conditions in which the drug has proved useful in his hands is *anorexia*—loss of appetite consequent upon exhausting diseases, such as prolonged fevers,

diarrhœa, dysentery, phthisis, etc. There is a repugnance to and intolerance of food in almost every form, which do not always yield to acids, bitters, and nux vomica as usually given. In these cases cannabis in small doses— $\mathfrak{M}\mathfrak{v}$ -x of the *tincture*, or gr. $\frac{1}{4}$ – $\frac{1}{2}$ of the *extract*—has been found very useful. The tincture may be given in emulsion, with a small quantity of mucilage and simple syrup, and flavored with rose-water. The extract may be given in lozenge or bon-bon form, after being rubbed up with white sugar, gum acacia, etc., to proper consistency. The mixture or lozenge may be given three times a day, half an hour before meals.

Another condition is *dyspeptic diarrhœa*, and the diarrhœa that is associated with defective action of the liver and deficient secretion of bile, and that tends to diarrhœa alba (tropical diarrhœa, in which there is a tendency to action of the bowels soon after meals, and a consequent hurrying of imperfectly digested food through the bowels. In the earlier stages of this disease cannabis is often of great service in controlling the diarrhœa. Even in more advanced stages of tropical diarrhœa cannabis is sometimes useful. The disease seems to be one primarily and essentially of the liver, and cholagogue remedies must be used. Of these mercury is most reliable—as blue pill or gray powder. The mercury is given at night, and the cannabis during the day. Begin with $\mathfrak{M}\mathfrak{x}$ of the tincture, and gradually increase the dose to $\mathfrak{M}\mathfrak{xv}$, \mathfrak{xx} , or \mathfrak{xxx} , three times a day or oftener. A suitable combination is:

Tincture cannabis indica.....	$\mathfrak{M}\mathfrak{x}$ – \mathfrak{xxx} .
Subnitrate bismuth.....	gr. x.
Mucilage of acacia.....	5ss.
Comp. spts. chloroform.....	$\mathfrak{M}\mathfrak{xx}$.
Cinnamon or peppermint water.....	\mathfrak{ss} .

Give before or after food, preferably after, especially when the dose is increased, since in this way unpleasant symptoms are obviated.

Both in tropical and in dyspeptic diarrhœa cannabis is better than opium because it in no way interferes with the bile-forming function of the liver. But when tropical diarrhœa has gone so far that the functional disorder of the liver is succeeded by organic changes, cannabis is useless.

A third condition in which cannabis is useful is in cases of chronic cardiac disease, and in chronic Bright's disease as a *hypnotic*. In cases of distressful insomnia and general inquietude, with an enfeebled heart, in which chloral seems inadmissible, the administration at bedtime of $\mathfrak{M}\mathfrak{xv}$ – \mathfrak{xx} of tincture of cannabis, with a small dose of chloral (gr. x) and 5ss of bromide, will often give the desired effect.

NASAL INTUBATION.—DR. D. H. GOODWILLIE, in a paper read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, December 27, 1887, described a method of nasal intubation as a valuable aid in the treatment of intranasal disease.

My first efforts began by the use of pure rubber-gum tubing of different sizes and strength and made applicable to each case by such impromptu means as

I had at command. These experiments, after being carried on for some time, were so encouraging that I had the tubes made in soft rubber and platinum or aluminium from models that have proved by experience to be of practical application. These improved tubes properly made have given me good results.

These tubes are oval in shape and of the same size, with the exception of the anterior end, that is shaped so as to fit the vestibule of the nostril, and by that they are retained in place. They are made of different sizes, one-fourth to one-half inch in diameter, and in length from two and one-half to three and one-half inches, but may readily be cut to any desired length. The metal tubes can be changed in their caliber by passing through them a core of the desired shape. The anterior end may be soft rubber, as it is more comfortable by its flexibility in the vestibule of the nose. The small rubber tubes are made use of at the beginning of the treatment and changed to larger ones until there is normal space or the deformity has been corrected. Then the metal tubes may be used if so desired, as they allow freer respiration through them. The tube is put into the nostril by raising the end of the nose and gently passing it into the inferior meatus, then releasing the end of the nose and passing the anterior end into the vestibule. They can not be seen externally, and so can be worn and treatment carried on without any unsightly appearance, or even knowledge of their presence. They can be readily removed by the patient for cleansing and returned to the nostril. Some of my patients have worn them constantly for months without discomfort and always with benefit.

I will simply refer to some of the nasal diseases in which they have been made use of—viz.:

1. Intranasal hemorrhage.
2. Fractures of the nose, internal and external.
3. Deviations of the cartilaginous and bony septum after the necessary surgical operation of section or removal of exostosis.
4. After the removal of hypertrophic turbinated tissues or polypi, whether by the cautery or snare.
5. Hypertrophies of the soft tissues without an operation, when worn for a sufficient time to produce absorption.—*N. Y. Medical Journal*, February 4, 1888.

TREATMENT OF CAROTID HÆMORRHAGE.—In a short article on this subject, in which he reports 4 cases, MR. FREDERICK TREVES says:

In the neck, pressure upon the carotid artery cannot be applied with success, or maintained for a serviceable length of time. The vessel can, however, be very readily occluded for a while and the carotid circulation arrested without the artery being permanently closed. This is effected by exposing the artery in the usual way and passing around it a thick piece of soft catgut. This is tied in a very loose loop. By pulling upon the loop the circulation through the vessel is at once arrested, but is, however, at once restored when the tension upon the loop is relaxed.

The following case, in which the method was used, is especially interesting:

A builder, æt. 41 years, a man in excellent health, met with the following accident. On Dec. 7, 1885, he fell from the scaffolding of a house in process of erection, a height of 26 feet. He alighted upon the iron railings around the house; the points of these railings were in the shape of spear heads, and one of them penetrated his skull. The point entered just in front of the left ear, and, passing through the maxillary bones, emerged through the hard palate of the right side, and, entering the mouth, broke one of the right upper molar teeth. The railing, having impaled the skull in this way, snapped off short, and the patient fell on the pavement with this enormous foreign body in his head. The piece of iron actually within the head measured five inches and a half in length, two inches and three quarters in breadth, and from half to three quarters of an inch in thickness. There was very free bleeding after the iron was removed, blood welling up from the wound and running from the nose and mouth. No pulse could be felt in the left temporal artery, and it would seem pretty certain that the external carotid artery had been torn across. I at once put a catgut loop around the common carotid; and the bleeding was stayed when the loop was drawn upon. No bleeding of any moment occurred after the first twenty-four hours. On the fourth day a weak pulse could be felt in the left temporal. On the seventh day the catgut loop was removed. The carotid wound healed without complication. The man did well, and was able to leave the hospital some six weeks after the accident.—*Lancet*, January 21, 1888.

SUCCESSFUL EXCISION OF A TUMOR OF THE SPINAL CORD.—Surgery is a science, or perhaps we should say a fine art, which will tolerate no limits to its domain. It has of late taken up the invasion of the brain in earnest; it has just made its first successful dash at a tumor in the spinal cord. Last Tuesday evening, before the meeting of the Medical and Chirurgical Society, a private patient of Dr. Gowers and Mr. Victor Horsley very generously allowed the Fellows and visitors of that Society the opportunity of seeing all that had been done for the improvement of his condition. He had spent about three years in severe pain, which was most intense just below and inside the angle of the left scapula, and was accompanied by absolute loss of motion and sensation of the body and limbs below that level. The upper border of the anaesthesia was distinctly in the region of the fifth intercostal nerve on the left side, on the right it was less accurately defined, but did not extend higher. All the symptoms agreed with those of tumors of the spinal cord, and the intense pain afforded ample justification for making an attempt to excise the tumor. Mr. Victor Horsley accordingly removed the spines and parts of the laminae of the fifth and fourth dorsal vertebrae; but not until the third vertebra had been similarly treated did the tumor come into sight. It was a small oval myxoma compressing and making a deep impression on the left side of the spinal cord below the third vertebra. It was easily shelled out, and, under careful antiseptic treatment the temperature

did not rise more than 1° F. The wound healed rapidly, except at the uppermost point, where a drain had been left in by which a little cerebrospinal fluid flowed away very slowly. For three or four weeks the former acute pain did not lessen, and even at times seemed more agonizing; but after that it gradually and intermittently decreased, and now, after seven months, is entirely gone; the sensation and motion of the body and legs are almost completely restored. This is, we believe, the first time that such an operation has been attempted, and we must, most heartily congratulate both the patient and his advisers on the triumphant character of its success. However far, and however quickly surgery may advance, it will long be a memorable day when it gained its first victory on so new a field and over so formidable an enemy.—*British Medical Journal*, Jan. 28, 1888.

RECTAL FEEDING.—From a study of the subject of rectal alimentation, DR. WEAVER (*Transactions of the Lucerne County Medical Society*) has formulated the following conclusions:

1. By the use of enemata life can be sustained indefinitely with little, if any, loss of weight to the body.

2. In a large proportion of cases in which rectal aliment is used, true digestion of albuminous, saccharine, and fatty food takes place, by virtue of inhaustion, or a reversal of the normal peristalsis of the alimentary tract.

3. While this is the case, there are doubtless instances in which retrostalsis does not occur, and for that reason the food used should first be artificially digested before being injected into the rectum.

4. While milk, eggs, and brandy are the best aliment for rectal nutrition, no one article should be used for too long a time, but frequent changes should be made, observing the greatest care to prevent irritation of the rectum, or intolerance of that organ for the nutriment required.

5. The enemata should, if possible, be administered by the physician himself. Where difficulty in retaining the aliment is encountered, the colonic method is preferable, the food being propelled through a rectal bougie. The food should be of the temperature of the body.

7. The rectum having once become intolerant of enemata, *absolute rest* must be given to that viscus for a few days, and reliance be placed on nutritious inunctions of the surface of the body.

7. For rectal alimentation there exists a wider range of usefulness than has heretofore been assigned to it. It is not only appropriate in the severer forms of chronic disease of the stomach and cesophagus, but is indicated and should be utilized in the management of all *acute* diseases when, from any cause, the stomach become intractable and rebellious.

8. In diseases of the stomach, even where a portion of the food ingested is retained by that organ, only to undergo fermentation, inducing thereby pain and distress, it is more logical to resort to rectal alimentation, not as an *adjunct* to, but a *substitute* for stomachal ingestion.

9. Certain organic lesions as well as functional

disturbances of the stomach are curable by means of rest to that organ, and by no other means. In rectal alimentation we have a safe and sure means of nutrition, pending the necessary period of rest to that organ.—*Dietetic Gazette*, January, 1888.

COLCHICUM IN THE URIC ACID DIATHESIS.—In an address on the *Therapeutics of the Uric Acid Diathesis* DR. I. BURNET YEO says that Dr. Bartholow's description of the effects and uses of colchicum is so complete that he has little to add to it.

"The prejudice against colchicum has induced Ebstein to make the extraordinary statement that it is preferable to relieve the pain of the gouty paroxysm by hypodermic injections of morphine. He says they act "quicker, more easily, and with less danger." I join issue with him utterly. The internal use of opiates in gout I consider, except under exceptional circumstances, indefensible. In a disease of defective elimination, you would be giving a drug which depresses in a remarkable manner the function of all the excretory organs but the skin. A very small dose of morphine will, especially in the gouty constitution produce clay-colored alvine evacuations, sometimes for days.

Colchicum then, I maintain, is one of the most valuable remedies, when judiciously given, for most of the morbid manifestations of this "uric acid diathesis," and so far from being a dangerous vascular depressant, I have shown, in my hospital practice during the session just passed, that in a case of chronic gout with subacute exacerbations, moderate doses of colchicum restored regularity and strength to an irregular and feeble pulse. I trust, then, that the absurd prejudice against this most valuable remedy which has been excited in the minds of the public will be removed, for I find many gouty persons who, much to their own disadvantage, positively refuse to take colchicum, because they have been told it is, "such a dangerous drug."—*British Medical Journal*, Jan. 14, 1888.

MECHANICAL TREATMENT OF SYPHILITIC ICHTHYOSIS.—The syphilitic affection of the tongue and mouth known as keratosis or ichthyosis lingue, or as leukoplakia specifica, which is due to unequal development of epithelium over different papillae, and which is by no means a very easy affection to treat successfully, caustic, astringent and disinfecting applications having but very little effect upon it, is, according to DR. HOROVITZ, best managed by mechanical scraping. He uses a sharp spoon with which he removes the thickened epithelium; in order to accomplish this several sittings may be required. He scrapes away the indurated tissue until the surface presents the appearance of a multitude of minute bleeding points showing that the vascular loops in the papillae of the dermis have been reached. Iodol-glycerine, glycerine of borax, or a 10 per cent. solution of sulphate of copper is applied to the raw surface. The pain is usually not severe, but in the case of sensitive persons cocaine can be used.—*Lancet*, Jan. 7, 1888.

THE

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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NEW YORK STATE PROVISION FOR THE INSANE.

The State Charities Aid Association of New York has recently done a very good work by the preparation of a bill, for introduction into the Legislature, that provides for the gradual transfer of the insane, both acute and chronic cases, from county and city poorhouses into the care of the State. Its prominent features are as follows:

1. The districting of the State into as many asylum districts as there are State Hospitals for the insane.

2. The reception by the State Hospitals of all the pauper insane from all the poorhouses of the districts to which the State Hospital belongs, at a uniform weekly rate *per capita*, charged to the counties, for each pauper insane person so received, whether an acute or chronic case, of \$1.50. This payment includes clothing and travelling expenses, and the sending of a trained attendant to accompany the patient to the hospital. All cost of care and maintenance exceeding this rate is to be paid for by the State at large.

3. The erection on the grounds of the existing State Hospitals of a number of inexpensive detached buildings, sufficient to provide suitable accommodations for the chronic pauper insane now in the poorhouses of the State, at a cost not to exceed \$250 *per capita*. These buildings to be erected, if possible, within one year after the appropriation is made.

The elastic nature of the proposed measure, by which present and future needs are provided for, as regards overcrowding, size of buildings, etc., is an important feature, and it is to be hoped that this act will be passed, as it is beyond question that the insane

can be cared for much more satisfactorily in every way by the State than by the counties individually; the State hospitals representing to-day the very best standard of treatment that has been reached in this country. In addition, it is highly desirable that the measure should be adopted at this time, for a movement is on foot, backed, it is said, by certain local political influences, to secure special legislation by which a number of the counties in the State shall be empowered to take care of their own insane in county asylums.

At the recent meeting of the Medical Society of the State of New York, the President, Dr. Alfred L. Loomis, referred to this matter in his address. He contended that experience universally condemned the advisability of such county asylums, and recommended that the Society should take action upon the subject. The special committee appointed in accordance with the suggestion made in the address, consisted of Drs. A. Jacobi and C. R. Agnew, and they prepared the following very admirable report:

1. That until comparatively recent times the insane were considered and treated as criminals and confined in dungeons or prisons.

2. Their subsequent retention in poorhouses was but a remnant and mitigation of the old system.

3. The treatment of the insane has improved with the progress of civilization.

4. Therefore special hospitals were supplied for them, and their welfare was entrusted to scientific and humane experts.

5. To return to anything like the old system of treating the insane in poorhouses or relegating them to the custody of county officials, would be a grave mistake. As early as 1855, at a meeting of the County Superintendents of the Poor, held at Utica, the following, among other resolutions, was passed:

"Resolved, That no insane person should be treated, or in any way taken care of in any county poor or almshouse, or other receptacle provided for and in which paupers are maintained and supported." (55th Annual Report, State Asylum, at Utica.)

6. For the proper classification and treatment of the insane more means are required than for the patients of general or even other special hospitals. Institutions for the insane, therefore, demand medical experts as superintendents, nurses trained in the general care of the sick and then in the special care of the insane, schools for the physical and intellectual training of the insane, for the practice of out-door and in-door industries, and many other appliances.

7. The Medical Society of the State of New York expresses, therefore, its objections to any plan or

law which in any way looks to the return of the insane to the county poorhouses as being unscientific and inhumane, and expresses its convictions that those institutions, like the State Asylum, which have Boards of Managers accountable to the State Government, and also to the public, are best adapted for the care of the insane poor of the State.

This report was adopted by the Society, and also the following resolution:

Resolved, That the above report on the treatment of the insane be sent to the Committee on Legislation of the Medical Society of the State of New York, with instructions to use it in its discretion, in the Legislature and elsewhere, to further the objects in view.

In the discussion upon the resolution the following extract from a letter of Dr. Jos. M. Cleveland, Medical Superintendent, Hudson River State Hospital, Poughkeepsie, N. Y., to Amasa J. Parker, Jr., President of the Board of Managers of the Hospital, was read as illustrating the progress that is being made in the scientific nursing of the insane; a kind of progress not likely to reach the insane if shut up in poorhouses.

"Next month, (March, 1888,) we graduate four young women from our Nurse's Training School. All four before coming here had graduated from a General Hospital Training School. They will have been with us one year in March. They have been very thoroughly instructed in mental nursing by lectures, class instructions, quizzes and clinical teaching. They are bright, intelligent and full of ambition to become thoroughly equipped in all that pertains to a high order of nursing."

THE VALUE OF IODOFORM IN SURGERY.

The year 1887 was prolific of iodoform literature, probably the more so because of the paper of Heyn and Rovsing, of Copenhagen, that appeared early in the year, and in which the surgical value of iodoform was denied. The latest contributions to the subject are the papers of A. Kunz (Ueber die Wirkung des Iodoforms auf Infektionsorganismen, in Ziegler and Nauwerck's *Beiträge zur pathologischen Anatomie und Physiologie*, Bd. ii, Hft. 2, Säger (Ueber die Einwirkung des Iodoforms auf das Wachsthum und die Virulenz der Milzbrand-bacillen, *Deutsche medicinische Wochenschrift*, No. 33, 1887), and Jeffries, of Boston (Anti-bacterial Action of Iodoform, *American Journal of the Medical Sciences*, January, 1888).

The papers of Kunz and Jeffries contain reviews of the literature of the subject, as well as the details of a number of bacteriological experiments. They are also interesting, as showing how bacteriological work is to be done, how evidence is to be weighed in this kind of work, and how clinical deductions are to be made. Jeffries asserts that the experiments of Heyn and Rovsing were free from errors of method, and were made in accordance with accepted rules. In fact, the objections made to the experiments were, that laboratory tests are no evidence of what occurs in the body; that in these tests no iodine, by virtue of which iodoform acts, was set free. "Strangely enough," says Jeffries, "none have pointed out that the experiments only disprove a germicidal action, but do not exclude an inhibitory action on their growth. The injurious effects of crowding are so great, in solid cultures, as soon to cover up any slight inhibitory action of the iodoform." The two most important points in Säger's paper are: that the presence of non-growing anthrax bacilli causes gelatine tubes to dissolve; and that iodoform limits the growth of the anthrax bacillus, and prevents its taking in a re-inoculation.

Until Kunz and Jeffries entered the field the whole question of the value of iodoform was involved in a mist. The early writers noted that the drug had a distinct action on putrefaction, but the more recent writers failed to observe any action on pus-producing bacteria; while the majority of clinicians were decidedly in favor of the drug. The conclusions of Kunz and Jeffries should have a direct tendency to settle the vexed question. It is evident that clinical experience and laboratory experiments should lead to the same conclusions, else one or both must be wrong. After his numerous experiments and somewhat exhaustive review of the literature of the subject, Kunz contents himself with the conclusions that *iodoform will prevent septic intoxication, but not septic infection*. The conclusions of Jeffries are of more practical value to the surgeon, for the reason that they tell more:

1. Iodoform not being a germicide is not a fit substance to use to procure asepsis of instruments, materials, or wounds.
2. Iodoform is allowable, with the present state of our pharmacopeia, in infected wounds where the true germicides are contraindicated, as by danger of poisoning or impracticability.
3. As has long been known, iodoform has a decided tendency to stop serous oozing, and, therefore, may be indicated in wounds where the moisture threatens the integrity of the aseptic or antiseptic dressing.

THE MEDICAL DIVISION OF THE PENSION BUREAU.

Bills have been introduced in the House of Representatives at Washington, proposing to increase the efficiency of the Pension Bureau by adding one surgeon and six medical examiners to the present force. This would make the medical staff of the Pension Office consist of one medical referee, one assistant medical referee, three surgeons and twenty-four medical examiners, which would certainly seem to be as small a medical corps as could be reasonably expected to properly examine and supervise the immense number of pension applications that reach the Pension Bureau of this nation in these days. The bills also propose to increase the salary of the medical referee to \$4,000 per annum; that of the assistant medical referee to \$3,600; that of the three surgeons to \$3,000; and that of the medical examiners to \$2,500. These propositions, both to increase the number of members of the medical staff of the Pension Bureau, and to increase their salaries, should be adopted without opposition from any one, for the proper discharge of the duties required demands thoroughly qualified medical men, and such cannot certainly afford to accept those positions for less pay.

SOCIETY PROCEEDINGS.

SUFFOLK DISTRICT MEDICAL SOCIETY.

Stated Meeting, January 11, 1888.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

THE PRESIDENT IN THE CHAIR.

DR. W. N. BULLARD read a paper on

A CASE OF CEREBRAL LOCALIZATION WITH DOUBLE TREPHINING.

(See page 228).

DR. J. J. PUTNAM said: Cases of brain operation are rare, and we should learn from them all we possibly can. Although as Dr. Bullard has said, we can through our knowledge of certain portions of the brain, localize with considerable accuracy certain lesions, especially those involving the motor functions, it is, on the other hand, I think, very difficult to tell what the nature of the lesion is, and the exact relation of the disease to the symptoms. The difficulty of determining at what depth a tumor lies, the fact that tumors which grow very slowly so often occur almost without symptoms, and our ignorance of many of the conditions that govern the occurrence of symptoms, would seem, I think, to make us very properly cautious in raising any very sanguine expectations about the result in most cases. And

although the case before us is highly interesting and justified, Dr. Bullard's claim in regard to it, that the diagnosis as to the lesion was made during life, it cannot count as one where much benefit could have been hoped for. In these congenital troubles, I don't see how we can expect to produce a result that would be particularly favorable unless we can operate upon them very early. And then the trouble comes in that the difficulties of early localization are greater than at a later time. The rapidly developing brain of the child is so susceptible to permanent injury; its growth is likely to be retarded; and an atrophy involving not only the seat of the lesion, but that of the whole hemisphere of the brain is liable to follow from any injury received at birth, or in the very early years of life. Moreover, the fact that localized lesions, even if they might have been removed soon after they occurred, give rise to secondary changes not only in the hemispheres of the brain, but in the deeper lying tracts, would, it seems to me, render this class of cases not a favorable one for operations of this kind.

In regard to the operation itself, of course the points are many and interesting, and I would not attempt to touch upon them at any length. One remark made in connection with a case operated upon in New York struck me as significant. It is important that the opening in the skull should be large; that quite a window should be cut, instead of the ordinary trephine hole, the belief being that under those circumstances the brain is less liable to protrude from the opening, and that the wound is more likely to heal favorably. I recently saw a specimen from a case in New York, which unfortunately terminated unfavorably, where, although no suppurating had taken place and no sign of septic poisoning showed in life, the patient died from what was considered as red softening, immediately beneath the seat of the operation without it being possible to discover any cause for it. The brain simply became softened; that was all one could say about it. It has usually been considered that serious results from operations are not likely to occur. Dr. Spitzka, in experiments on animals, has gone further than that, and says that not only are unfavorable results not likely to occur, but a second operation in the same region is even less likely to do harm.

I cannot help saying a word about a case that I saw myself, which seems at once an illustration of the difficulties in the way of the diagnosis of cerebral tumors, and also of the possibilities of cerebral surgery. It was the case of a woman that exhibited through life no localizing signs except toward the end of her life a slight facial paralysis on one side. Beyond that she had an intense headache, and a progressive stupor. She died, and at the autopsy a large sarcomatous tumor was found pressing apart the sides of the fissure of Sylvius, having caused no real injury beyond the pressure, to the brain itself, and being attached to the dura mater on the sphenoid bone with very slight attachments. If the tumor could have been reached it certainly could have been removed without injury, I think. On the other hand, it had grown to the size of one-half or

two-thirds of one's fist, without it being possible to diagnose it as central or cortical.

DR. MORTON PRINCE said: In regard to the possibilities of the operation, I feel like being a little cautious; as if we must not go ahead too fast. We don't yet quite know what the possibilities of brain surgery are. There are certain fixed principles upon which, in the light of our present knowledge, brain surgery must be based. These are that an operation should be undertaken only for the removal of a lesion causing symptoms of irritation, or threatening the life of the patient. All operations thus far have been based upon this principal. A brief survey of these cases will make this clear. Up to this time they have been reported only fifteen cases of pure brain surgery. Of these, eight were cases of tumor, of which only three survived the operation, and of these three one died later from recurrence of the tumor. In the remaining seven cases, the operation was undertaken for the removal of a supposed lesion causing epileptic fits; in these seven cases there was recovery from the operation itself. It is interesting to note that the operator in these latter cases as well as in the successful cases of tumor was Victor Horsley, who is the only operator, I believe in whose hands the operation has not ended fatally. He has operated nine times with only two deaths. In one of his cases only was death the immediate result of the operation, and in this case it should be said that the patient was in a very critical condition when the operation was undertaken. The second death (the one just referred to) was due to recurrence of the tumor. In the seven cases operated upon for epilepsy due to irritative lesion, there was complete and permanent cessation of the fits in four cases, and more or less improvement in three. In this latter class of cases the operation was undertaken with the idea as of removing the diseased tissue which was regarded the point of irritation and the exciting cause of the fits. Now it will be seen that the principle underlying all these operations was that there was a lesion of the brain, causing not merely paralysis and loss of function, but aggravating irritative symptoms, or else threatening life. In one case the fits aggregated three thousand in two weeks. To operate upon the brain in such cases as these I believe to be sound surgery and sound neurology, and there seems to be a legitimate, even if limited field in this direction, and perhaps a brilliant future. Time, however, can only settle this. But when we go from this to cases of paralysis, and that too with spastic symptoms, I confess I feel very doubtful. I am unable to see on what sound principle of neurology, operation in such cases can be based. I am unable to understand how a pure paralysis due to a hole in the brain is going to be improved by making the hole bigger. All that we could do by operation would be to cut out more brain, and that is equivalent to enlarging the lesion, and would simply increase the extent of paralysis. Furthermore, when spastic symptoms of long standing exist, as in the case reported, there undoubtedly exists secondary degeneration extending down along the direct fibres through the motor tract to the cord,

and it is to this secondary degeneration that the spastic condition is due. Mere removal of the cortex could not then in any way relieve these symptoms.

There is one point of which the reader spoke and which I think should be emphasized still more, and that is the necessity, if you are going to operate, of taking into account only the symptoms themselves in localizing the lesion. That is, the proper localization depends entirely upon the grouping of symptoms, and it is only by such grouping that we can localize the disease. It makes no difference where the original injury to the skull is situated, and this should not be considered. This seems a trite remark, and yet I think it not uncalled for. I remember seeing a case the other day, a case of aphasia, where the trephining was done on the top of the head, attention being directed to that spot on account of a former accident. Of course the lesion must have been lower down.

Perhaps there is another class of cases where there is a possible field for this operation, and that is where, in cases of this kind, there is not only paralysis of one or more members, but where there is also atetosis or clonic localized spasms of severe type. I saw a case of this kind some time ago. I suggested the operation, but did not see the patient again. I think perhaps in that case something might have been done. I do not say this to criticise the paper, for I think the reader should be highly gratified at his success in localization in this case.

DR. J. COLLINS WARREN: I have very little to say, but have studied this matter up a little. I was struck by what was said about the caution with which we should go ahead in this region of surgery. I think that corresponds pretty well with the writers on this subject, especially in works on surgery. They say that the study of the cerebral topography, and the physiological action of these centres indicates rather what not to do than what to do. That is to say, the opportunities for interfering and trephining are comparatively few as compared with the indications when we should abstain, and yet many of these indications might tempt one, ignorant of cerebral topography, to interfere and relieve pressure or something else there. For instance, if we have injury with symptoms of paralysis, which correspond to that tract, not too extensive, that might perhaps be a reason for interference. If, for instance, after a blow, we have paralysis of the arm and leg, that might be an indication for trephining at the upper portion of the fissure of Rolando. But if we have total anaesthesia, not only is the motor tract involved, but an indefinite amount of brain convolution behind the ascending parietal. That is, it is an unknown quantity; a considerable surface, so that in order to reach that surface we would have to put on four or five trephines side by side, in order to uncover it and relieve it. There it would be contraindicated. Limited paralysis or anaesthetics, with well-defined injuries, give the indications for interference in a surgical case.

From the surgeon's point of view there is one other indication for interference, and that is in hemorrhages from fracture. In a diagram in which the

middle meningeal artery is represented, we can see how, by measuring back from the external angular process three and one-half centimetres, we can strike the exact point crossing the middle meningeal artery, and if we were to have symptoms of pressure in that part of the brain substance, for instance, of facial paralysis, we could readily interfere, and trephine at that point, and get at the artery comparatively near its origin. If we found that there was any difficulty at that point, but it appeared that there had been a hæmorrhage from the artery, the indications are to put the trephine on the same horizontal line but more posteriorly, because the blood-clot may be in the posterior part of the brain rather than the anterior, in some cases. The reported cases are, I think, a considerable number, although I cannot quote them.

Dr. Prince spoke as if trephining for epilepsy were comparatively a novelty. I think that it is an operation that has been done considerably, although perhaps done in a different way, such as trephining for simple and depressed fractures. I would like to ask if there is any special localization, other than the determination of the seat of the depressed fracture?

DR. PRINCE: I referred to a different form of operation. Not merely trephining, but removing a portion of the brain, even when there is no reason to suppose that there is a gross lesion. Hughlings Jackson has suggested that in cases of epilepsy and epileptiform convulsions, where you are able to trace the beginning of the convulsion to a focal point in the cortex, it would be justifiable to remove that centre as the focus of the epileptic discharge. For example, suppose the convulsion always to begin in the thumb, and to progress in a definite order throughout the body, in that case the centre for the thumb will be found to be the seat of the most intense discharge, and he considers it good neurology and surgery to remove this centre. Acting upon that advice, Dr. Horsley, in one of his cases, did remove the centre for the thumb, with the result that he cured the fits. It is in that sense that I speak of brain surgery as being a novelty, and it is in this field that perhaps there is a considerable opening for the future.

DR. S. H. WEEKS, of Portland, said:

If I may judge from my own experience and observation, the operation of trephining the skull is not attended with as much danger as is supposed. I recall a case (and I wish I could detail it more accurately than I am able to), that I operated upon at the Maine General Hospital some year or eighteen months ago, in a young man who was having epileptic fits every week, and sometimes twice a week, following an injury which he received when a lad, some fourteen or fifteen years ago. He was riding a horse for raking hay, and was suddenly thrown from the horse, and as the rake revolved one of the teeth, made of steel, struck his head near the bregma and I think a little to the right of the median line. At the time there was a compound comminuted fracture with depression. The physicians at the time removed some portions of the skull. The wound healed, leaving a cicatrix, and in the course of a year or two there commenced convulsions, first in one hand, and I am sorry that I am not able to say which,

but I hope some time to report the case, that you may have the exact measurements and symptoms, and derive more advantage than from any recital here now. I am sure that the convulsions first started in the hand, and then extended into the arm, and then involved the entire side. He had been at the hospital once before, and after consultation we refused to operate. He went home and suffered another year, and his convulsions becoming very frequent, he again returned, and said: "If there is anything that you can do, I want it done, no matter what the risks or dangers are." At the second consultation we decided to operate. I repeat this more to show the safety of the operation than anything else. Making an incision through the skin, I found that there was a portion of the skull that had not been restored, and here the scalp and dura mater were adherent. I dissected off the scalp from the dura mater, directing my dissection as well as I could so as not to open into the cavity of the arachnoid, and came to the edge of the bone, which seemed to be indented, and then took out a section of bone. Not finding a depression there, I felt that I had not reached the difficulty, and took out another portion, and upon that button there was an exostosis from the inner surface to the extent of three or four lines, extending down on to the dura mater and firmly adherent to it. After I had loosened the segment of bone, finding this projection adherent, I was obliged to take out an elliptical portion of the dura mater in order to remove the bone. I brought the edges of the dura mater together with small catgut suture, and then closed the external wound, applied a simple dressing, and put the patient to bed.

There were almost no unpleasant symptoms following. In fact, so comfortable was he after the operation, that he would sit up in bed in spite of my cautions, and declared that the only thing that he was kept in the hospital for was to let his hair grow again. I believe the danger in trephining is not as great as we have supposed. And while there are many diseases that we may not be able to cure by brain surgery, yet I believe there are many cases which are capable of cure, or of being benefited by these operations. One word in reference to the future of this patient. While the fits were not cured, they were very much mitigated. I saw him a few weeks ago and inquired particularly for the symptoms, and he said that once a month or so he would have a slight convulsion, but nothing to compare with what they were before; and were it not for his intemperate habits, which he continues, I believe the benefit would be much greater. There are other cases that I think of, but I will not relate them. I thank you for your courtesy and kindness, and shall be very much interested in listening to the further discussion.

DR. P. C. KNAPP said: I have been very much interested in the paper as showing the very exact localization of the lesion. I would agree with Dr. Putnam and Dr. Prince in what they have said. There is one point, however, that seems worthy of notice, and that is the fact that although there was apparently a lesion in the cortex, which is so com-

mon in these cases, there were no convulsions at any time in the history. A year and a half ago Dr. Sachs, of New York, laid special stress upon the presence or absence of convulsions as an important symptom in the localization of the lesion. In cases of intra-cerebral hæmorrhage or embolism, he believed that there were no convulsions, but in cases where there was cortical disease, he believed that convulsions were present.

This case, I think, is of special interest, as showing the presence of probable cortical disease and entire absence of convulsions. I would say, moreover, that as the case was reported, I do not see what justification there was for either operation. Certainly the cicatrix on the right side caused no symptoms, and after so long a duration there was no evidence of any disease there to be operated upon. Nor do I see what could have been gained in any way by operating upon the other side, for the symptoms were those merely of paralysis and secondary degeneration, and no operation whatever could have helped the patient.

I agree with Dr. Prince fully that, in case of convulsions or athetosis, perhaps there might be benefit in removing portions of the brain substance, but certainly there is one point that might have a bearing in such cases. In some cases that I have seen, where the limb was only partially paralyzed, there were athetosis or convulsions starting in the hand. Here, if you were to cut out the centre for the hand, which was the chief seat of the lesion, you would produce absolute paralysis of the hand; this would deprive the child of a fairly useful hand, and would leave him in a less advantageous position for getting through the world than he was in before.

DR. PUTNAM: Of course, in localization we refer chiefly to cortical localization. It seems to me, however, that this case is one where localization of that kind is really not possible. What we had present was a hemiplegia, apart from the secondary changes. The aphasia, I take it, would count for little or nothing, for the child had never spoken. Even if that were not so, the function of speech would be probably sooner lost in a child's brain than in an adult's, so I cannot see how we could strictly localize the lesion. It was evident that it involved structures either so extensive or so far beneath the surface as to include all the tracts coming from the opposite side of the body; that is to say, it must have been a very extensive cortical lesion, and in that case not strictly localizable, or else a moderately deep-seated injury; and I do not see how it would be possible to localize it with certainty in one part rather than another of the motor tract, except that we might perhaps say that it was not in the pons.

DR. KNAPP: I would like to ask Dr. Prince one question: In speaking of Mr. Horsley's removing portions of the cerebral cortex where the convulsions always began in one portion of the body, he said that Hughlings Jackson advised it. I would like to know whether he recalls any case in which Mr. Horsley operated where there was no gross lesion of the brain? It seems to me that in every case he found some thickening of the meninges, or a tumor, or something of the sort. I do not recall any case where

there was no disease whatever, where there was simply the functional disease starting at that point.

DR. PRINCE: There were, I think, two cases. In one he removed not only the tumor, but also the thumb-centre. In this case he diagnosed a doubtful lesion. He knew that there was a lesion, but was in doubt as to its exact nature. As I understood the report, when he came to open the skull he found no lesion whatsoever, but he still removed the portion of the brain corresponding to the seat of the epilepsy. At any rate, Jackson advised it, and said that he would advise the operation in the future. It seems to me that this is a sound principle to go upon simply as a theory in a very grave case. Of course you would not operate upon a case of that kind unless it were a case that justified some risk.

DR. KNAPP: I did not know that a case had been reported in which there was no gross lesion.

DR. WEEKS: In speaking of the localization of the different functions of the brain, I recall a case that came under my observation several years ago, where a man who had organic disease of the heart was taken suddenly with aphasia, and the sickness lasted only two or three weeks. His sickness increased day by day, manifesting decidedly cerebral symptoms. The most prominent symptom was the loss of the power of speech. It was at the time when the discussion as to the seat of language was going on in the medical journals and societies, and when the medical opinion was not as well satisfied as now in regard to the localization, and yet my attention had been called to the anterior portion of the left hemisphere, the temporal lobe, as the seat of language, and I watched the case with a good deal of interest. When he died, I was successful enough to get an autopsy and, on taking off the calvarium, I found the dura mater at that point a good deal congested; and on opening through the membrane, and going through a very thin portion of the cortical substance of the brain, I came to a large abscess. Now I believe that to-day, if you had such a case as that, you would operate upon the abscess and give exit to the pus, and in such a case as that I believe you would save the life of the patient. Here was the seat of the lesion, and, so far as any case can prove the theory, certainly this goes to substantiate the theory of the localization of the seat of language.

DR. WALTON: I am quite agreed as to the importance of the surgeon's being prepared for early operative interference in just the cases that are indicated. I do not think, however, that this variety of cerebral surgery, where the healthy skull is trephined without fracture or other injury, has so great a future as, perhaps, was hoped for it at first; certainly no such future as abdominal surgery, for the cases are really limited in which the operation is sufficiently indicated. I agree with Dr. Prince that, as we eliminate the cases, we shall finally become pretty well sifted down to lesions that are irritant, and lesions that bring about decided pressure symptoms, in which we feel pretty certain that we can relieve pressure. I think there are certain localized abscesses which can be operated upon with advantage. All these lesions must be decidedly near or at the cortex, or we are

not justified in operating. The result will be, that there will be so few cases in which we will feel ourselves justified in operating, that opportunities will be rather rare. We have been on the lookout at the Massachusetts General Hospital for an acceptable case, and I fancy it has been true at the other hospitals, and there has not been, so far as I know, any case admitted. The nearest we have come to it was one case in which we did diagnose a tumor in the cortex. There was paralysis or partial paralysis and, if I remember rightly, convulsions of one arm, in which we were sure that the tumor was at the cortex, and advised operation, but the patient demurred.

I was interested to hear Dr. Putnam speak of a considerable opening in the skull. I think it is important to make as large an opening as possible, not only for the sake of after-results, as far as the case is surgically concerned, but also for the sake of helping us to localize. My attention was particularly brought to that point by going to the demonstration of Drs. Warren and Richardson, last evening, in which the skull was trephined on the cadaver and the fissure of Rolando found. The fissure was localized according to the regular method, the opening made perhaps three-quarters of an inch in diameter, and directly in the middle of the opening was a fissure, but it seemed to me at almost right angles with the direction one would suppose it to go. But, on removing the calvarium and dura mater, it was afterwards discovered that it was the fissure of Rolando, but it had taken a turn at that point. It is not always so easy, even after the brain is removed, to determine just where the various fissures are, as sometimes those fissures which should be the most distinctly marked are the least so, and other less important fissures become more marked. And in this case I should say that the frontal fissure was much more marked than the fissure of Rolando.

DR. BRADFORD: I did not have the pleasure of hearing Dr. Bullard's paper, but he has allowed me to read it, and I think it covers the ground pretty thoroughly. It only remains for me to say what the reasons were for performing the operation. I think some apology should be made for an attempt at an operation on a child who was idiotic. The operation was done in this case chiefly for the reason that it was hoped that the spastic symptoms might be relieved. The parents were told distinctly that it was purely experimental surgery, and they wanted to have the operation done, even on those grounds. Notwithstanding that, in these cases of spastic paralysis, the cortical substance is in a large number of cases involved, it was hoped that possibly some irritative centre might be found, and the removal of that might relieve the spastic paralysis of the leg and arm, and render the locomotion of the child better. The result proved that the operative interference was not justified except as an experiment. The cause of death in this case is, I think, somewhat interesting. The child died, unquestionably, of shock, and the question arises whether the double trephining may not have been more than was proper to have done.

It is a question whether it might not have been

better to have trephined in one locality, and waited before trephining in the other. It did not seem so at the time, and the double trephining was undertaken; trephining over the cicatrix to satisfy the parents, who believed that the condition was in some way due to the depression of bone. Both Dr. Ballard and I thought not. That double trephining may have given rise to the shock.

Another cause of death may have been the use of morphia before the operation. The child was given morphia subcutaneously or by the mouth a short time before the operation, carrying out Mr. Horsley's idea for the purpose of contracting the vessels in the brain. I think a larger dose was given than would have been needed; $\frac{1}{2}$ of a grain was given, and I think $\frac{3}{4}$ would have been better. At any rate, during the etherization the child was more or less under the influence of the narcotic. That may have acted injuriously, although the child came out from the ether and morphia before dying.

Another cause which may have given rise to death was bleeding from one of the larger vessels in the diploe during the operation. That was plugged by a piece of wood, but the child lost some blood. I think, so far as we can judge from the single case, it would not be desirable to do a double trephining in a child.

DR. M. H. RICHARDSON said: It seems to me, as Dr. Walton has said, that the probable future of cerebral surgery does not promise the results that we get in other parts of the body, the peritoneal cavity for instance. My own experience in trephining for the sake of finding an abscess, for removing a possible irritating cause of epilepsy, has been uniformly unsuccessful. I reported two cases a year ago of trephining for epilepsy, and another for cerebral symptoms after compound fracture, without any benefit whatever. And since then I have trephined to evacuate a probable abscess after a gunshot wound; a good case for symptoms arising after injury. In the latter case death followed, and in the first two cases there was no benefit whatever. It seems to me in a certain number of cases, where symptoms of definite localized irritation can be made out, at present it is the duty of the surgeon to interfere on the chance of doing some good. But it seems to me that, as matters now stand, the chances are that in a large number of cases there will be no permanent benefit following the operation.

DR. BULLARD: I agree entirely with Dr. Prince and Dr. Putnam in regard to the fact that we should not be too fast in brain surgery. I think that nobody who has had anything to do with the localization of lesions fails to understand the difficulties and the many problems we have to consider, and the very small number of cases in which we are justified in operating. But it does seem to me that such a class of cases exists, and although the most prominent cases are those where convulsions or irritant symptoms follow, yet we must not limit ourselves to them entirely. Ross says that the larger number of hemiplegic cases and convulsions come on at least by the time the child has reached 8 years, or sometimes a little later. I have not experience enough to know

whether that is true, but it is certainly true that, in a certain number of cases of spastic hemiplegia, the convulsions do come on later. Now I should be very slow to advocate operation in cases of spastic hemiplegia unless there were some special reason for doing so beyond the mere fact of the existence of a hemiplegia; but I believe that there may be certain cases where it would be advisable to perform the operation. In this particular case I think we had good ground for localizing the lesion as we did. Of course I have not gone into all the details. A good many symptoms were absent which would have been likely to be present if the lesion had been in other parts of the brain. Of course, in such a case, the operation is done with the understanding that it can only be experimental.

DR. BRADFORD: The sense of the meeting seems to be in disparagement of cerebral surgery. I don't think we shall put ourselves in the line of modern surgery if we take the ground that cerebral surgery has not a future, and I think we can anticipate a brilliant future for it. We are only in the beginning and I think what has been done shows that there is a great deal more to gain when our experience is greater. I think it is in the recollection of most of us here, that here in Boston the statement was made on the best surgical authority, that ovariectomy was not a justifiable operation. We have lived to see that dictum not accepted, and I think we will find that cerebral surgery has a future before it that we have not yet thought of.

DR. GEORGE B. SHATTUCK then reported some cases of *Family Ataxia*.

DR. FRANCIS H. WILLIAMS exhibited the new drug,

AMYLEN-HYDRATE

and he said: This substance may be used as a substitute for chloral. It has a peculiar odor, something like ether, and the taste is camphor-like, with an after-taste of peppermint. It is a clear, limpid liquid, and is fairly soluble in water. It takes about eight parts of water to dissolve one of the drug, and is quite soluble in alcohol. The dose is from half a drachm to a drachm, 3 to 5 c.c. It does not act so strongly as chloral, it is not so powerful a drug, but on the other hand it is free from some of the dangers of chloral. It does not act to depress the heart and respiratory centre as much as chloral does, and for that reason is a safer drug to use. In many cases it seems to work well, in a smaller number it has not been very efficacious. In one case for example, in Dr. Mason's service, 40 minims of the drug were used in a uterine case where the patient had slept very poorly for several nights. She had some pain. One-sixth of a grain of morphia, repeated, was not able to give her the required sleep. This new remedy was given at 10 o'clock. At 10.15 she was asleep, and she slept nearly all night. As a rule the after-effects are not unpleasant. Here and there a few inconveniences are experienced from it. In one or two cases the remark was made that the patient experienced a pleasant sensation for an hour as though drunk, and was somewhat silly. In this case she felt

contented, and went to sleep in about an hour. I will not do more than call your attention to the drug and suggest that for certain cases it is likely to be a valuable substitute for chloral, but a better reason for not saying more about it is that perhaps Dr. Mason will be kind enough to tell us something of his experience in using the drug. I have reports of cases in which it has been used in Germany, and in about 80 per cent. of the cases it has proved satisfactory. Unpleasant after-effects have not been noticeable.

DR. A. L. MASON said: I have a brief memorandum of some of the cases, but I will not delay you with it at present except to say that they were all cases of marked insomnia. There were two cases of rheumatic fever, with heart complications, in which we obtained four hours' sleep. In one case of severe measles four nights of uninterrupted sleep were obtained. One restless typhoid patient was not quieted by urethan, chloral, bromides or opium. Drachm doses of amylene-hydrate gave a good night's sleep. A case of acute tonsillitis, sleepless for four nights, and another patient with dyspnoea, slept well after half a drachm. A case of abortion obtained good sleep for five nights.

Another patient who had sleepless nights after urethral caruncles were removed, and a uterine case, in which one-sixth of a grain of morphia, repeated, was of no avail, had a good night's sleep after 40 minims. And the same dose answered the purpose in a case of chronic nephritis with insomnia. A patient with cardiac insomnia, who had been treated with everything else, has had from five to seven hours' sleep after this drug. Its effect appears better than that of paraldehyde or urethan. It seems to be free from the disagreeable after-effects of chloral or opium. The sleep usually comes within twenty minutes after it is given. No ill effects were observed. There was mild intoxication in a few instances.

These cases are, of course, too few in number to draw conclusions from them as to the power of this drug. I believe it is not yet in our market and probably Dr. Williams has had the only specimen.

DR. ALBERT N. BLODGETT: If it is in order I would like to say a word for paraldehyde, that has been mentioned in connection with the new drug presented to-night, and which has previous to this seemed to be the drug which has produced better results than any other of that character. Of course, when I say "of that character," I mean a drug which is a simple hypnotic and not a sedative like opium. Paraldehyde has on several occasions, under my observation, produced a sleep which seemed to me more restful than that produced by any other hypnotic except perhaps urethan, and the latter seems to me less efficient, as it soon loses its influence, whereas paraldehyde seemed not to lose its efficiency. What pleased me most was the remarkable absence of after-effects after paraldehyde, which has been mentioned as pertaining also to this new drug. That seems to me to be an important advantage for we don't know how long it may be necessary to use it, and the use of other drugs might not be desirable. The nauseous taste of paraldehyde, and the eructations that rise after its use and the very great difficulty of mingling it pleas-

antly with other substances, are serious objections to its employment.

DR. WILLIAMS: This new drug does not seem to me to be as disagreeable to take as paraldehyde. That is one advantage that it has, and I think it is a rather stronger drug.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, February 2, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

DR. B. F. BAER presented the specimen and read the report of a

CASE OF NON-PAPILLARY INTRA-LIGAMENTOUS CYST; ENUCLEATION OF ENTIRE TUMOR IN THE RIGHT BROAD LIGAMENT; OF LINING MEMBRANE ONLY IN THE LEFT.

Sessile tumors, whether cystic or solid, are always more or less dreaded by the operator because of the greater difficulty and danger attending their removal, and also because, in the case of sessile cysts, the results as to the permanent relief of the patient is less certain than where the tumor has a pedicle. Clinically and pathologically, therefore, these cases are of great interest and importance.

Pain and hæmorrhage, are the important subjective symptoms. The former is usually present, sometimes in great severity; the latter is at times alarming in the quantity of blood lost and in the frequency of its recurrence. This is not surprising when we consider the close relation which these tumors sustain to the uterus and to the other pelvic organs and tissues. The wedging and pressure which results from the growth of the tumor in the limited space produce great congestion of the blood-vessels from stasis. The uterus becomes enlarged and softened in consequence and metrorrhagia follows; but the hæmorrhage is conservative to a certain degree in relieving the distended vessels, probably averting rupture of a vein in the broad ligament or in the tumor. The pain which results from the stretching of the nerves involved is also relieved or modified by the depletion following a free hæmorrhage from the womb. But the flow once started does not always remain within the conservative line; it sometimes becomes uncontrollable and results in acute and serious anæmia.

According to Doran, sessile cysts which arise from the hilum of the ovary or from the Wolffian relics in the broad ligament are usually papillomatous; but that non-papillomatous sessile cysts infiltrating the broad ligament are not infrequently met with is shown by the following statement from that author: "In 24 cases where I assisted at the operation, sessile cysts infiltrating the broad ligament were removed, more or less completely, but their origin could not be ascertained; none of these contained glandular growths, most were multilocular, but papillomatous growths did not exist." (Tumors of the Ovary, etc., p. 68.) Further, the ordinary pedunculated multilocular cyst of the ovary sometimes contain papillo-

matous growths, the result possibly of stray Wolffian relics. I have presented at least one such specimen to this Society, and I have seen others. On the other hand the multilocular ovarian cyst without papillomatous material has been found, in rare instances, to have invaded the hilum and broad ligament in its growth. Doran records two such cases. He says, "I have seen two cases where a sessile cystic tumor of the ovary was removed, and this proved to be an undoubted case of glandular cystic disease invading the hilum and broad ligament."

The case which I here report, is probably another instance of this pathological anomaly.

Mrs. J. was sent to me by Dr. O. H. Adams, and entered my private hospital in April, 1887. She is 32 years of age, married, and has had three children, the last two (twins) eight years ago. Following her last labor she had puerperal mania, which necessitated her confinement in an insane asylum during four months. Four years ago she began to have attacks of sharp pain in the right ovarian region, radiating to the groin and down the anterior portion of the thigh. The pain was intermittent in character and cramp-like, lasting hours at a time, and was usually followed by a purulent, fetid discharge from the vagina, which would afford her great relief. At other times the attack would end with a profuse metrorrhagia, which would leave her pale and weak, but free from pain. About two years before coming under my care, she first noticed a "lump" in the right groin which has gradually increased in size. Sometime after she noticed a similar growth above the left groin. She was considerably emaciated and looked very ill.

Examination revealed a tumor as large as a child's head in the right iliac region and a smaller one in the left ovarian region. The tumors seemed to be fixed in the pelvis and to have a broad base attachment. They were immovable below but mobile above, and semi-fluctuating. Vaginal examination showed them to be so deeply attached in the pelvis and so intimately related to the uterus that I was unable to complete my diagnosis without anæsthesia. The patient was therefore placed in bed and ether administered, when it was found that the uterus was elevated by the tumor on the right side, with which it was connected. There was evident fluctuation though the tumor was thick-walled and very firm, almost hard. The lower surface occupied the position of the broad ligament at the side of the uterus. The same condition existed at the left side, but to a less degree. I diagnosed sessile cystic disease of both ovaries or broad ligaments, and advised immediate operation, to which the patient gladly consented.

On April 13, 1887, I proceeded to operate, being kindly assisted by my friend, Dr. Daniel Longaker. When the tumors were exposed they were found to be so closely connected with the womb that they seemed to be one with that organ, which rested as a wedge between them. The Fallopian tubes extended outward over the upper surface of the tumors, while the broad ligaments and the greatly distended veins of the pampiniform plexuses were expanded so as to apparently envelop them, the whole present-

ing a dark purple appearance, which was not at all reassuring. After separating some slight adhesions on the posterior aspect of the larger tumor, and rolling it forward, the nacreous surface common to the multilocular ovarian cyst was exposed to view. Selecting a spot on this free surface because it was less vascular, I now plunged a trocar into it, when about two pints of a tarry-looking fluid drained away. A more thorough investigation which the diminished size of the tumor now afforded, showed it to be adherent to the cecum also. Previous to beginning the enucleation, I passed a long blunt needle charged with a double ligature through the expanded broad ligament at its least vascular portion between the uterus and the tumor, and as far below the Fallopian tube as could be done with safety. One side of the ligature was then drawn up and tied close to the uterus, including within its grasp the tube and vessels. Thus insured against hemorrhage from that source, I now cut through as far as the ligation extended, and continued the enucleation down to the base of the tumor, and then outwards, finally separating it from the head of the colon. There was some bleeding from the numerous veins which were broken, but this was readily controlled by catch-forceps and ligatures.

Attention was now given to the tumor on the left side. This was found to be deeply imbedded in the pelvis and firmly fixed to the uterus, Fallopian tube, descending colon and rectum. The upper surface was covered with a network of distended veins, some of them as large as a quill. Enucleation of this tumor seemed too hazardous and hysterectomy was out of the question, for to do the latter the tumor must first be dissected from the colon and the pelvic floor, which was not practicable. I determined, therefore, to evacuate the contents of the cyst by aspiration, and then to shell out the lining membrane, or, failing in this to insert a drainage tube into it. But while endeavoring to find a position for puncture my finger passed into the tumor, low down on the posterior border of the broad ligament. Instantly the parts were flooded with a tar-like, semi-fluid substance similar to that which had been evacuated from the cyst on the right side. This was removed as quickly as possible by sponging. I then passed my finger through the opening which I had thus accidentally made, and after a careful and gentle dissection succeeded in removing the entire secreting surface of the cyst. Blood was now flowing from the small valvular opening in the broad ligament, but as it was apparently venous I hoped to check it by compressing the now flaccid folds of the broad ligament; for this purpose several large sponges were inserted and external pressure made upon them while the abdominal sutures were being placed. The sponges were then removed. There was still a slight flow of blood, but as it was doubtless only a venous oozing I concluded to close the wound and trust to pressure and the drainage tube. The patient was placed in bed and the tube carefully watched. During the next two or three hours several teaspoonfuls of quite bloody serum passed through it; after forty-eight hours the tube was removed.

This patient made a slow, but good recovery, and went home six weeks after the operation. She has been entirely relieved of her former sufferings, and the loss of weight and strength have been regained.

DR. WM. GOODELL reported

A CASE OF SPLENECTOMY.

Mrs. R., æt. 40, had chills and fever in early life, but after her marriage eighteen years ago she removed to a healthy country town and had no return of the disease. She has had two children, the youngest seven years ago. At this labor she had a serious flooding and was confined to her bed for six months from excessive prostration. Since that time she has never been well, being weak and miserable. Her monthly periods were always free and generally painful. Last March she had a very severe attack of what her physician called malarial fever, and her life was threatened by repeated attacks of hæmatemesis and hæmoptysis. A sore tumor was now discovered, which was pronounced to be a uterine fibroid, and she was sent to Dr. Goodell. He found the womb pushed low down and retroverted by a solid tumor, which started from the region of the right ovary and ran diagonally towards the splenic region. It entered the pelvis so low down as to cause bulging of the anterior wall of the vagina. The womb seemed to be independent of the tumor, for the former could be moved about freely with the sound; yet when the tumor was pressed upwards it conveyed motion to the womb, drawing it also upwards. The tumor was never free from pain and the complexion of the woman was markedly cachectic. The diagnosis was made of sarcoma either of the right ovary or of the omentum.

At the operation very long incisions were needed, reaching not quite up to the ensiform cartilage. The tumor was of a dark purple color and was attached in every direction by very long, tortuous and wholly denuded vessels, which looked like the largest earthworms and were of analogous length. Most of the vessels came from the omentum, which had disappeared, apparently by being incorporated with the tumor and by having its connective tissue and fat removed by absorption, leaving the blood-vessels bare. These vessels were either single or else grouped in large bundles, and had all to be ligated. By them the tumor had evidently been nourished, for what looked like a pedicle was slender, long and twisted. It was lost in such a mass of livid veins that Dr. Goodell did not dare follow it up to its source. His diagnosis had been sarcoma of the omentum, but he was so uncertain of it that he sent the specimen to Dr. Formad, who pronounced it a leukæmic spleen. It weighed not quite 6 lbs. The woman did well for four days, then symptoms of embolism set in, the sputa became streaked with blood, and she died on the sixth day. So far as he can learn from the literature on the subject, his case was the eighteenth in which a leukæmic spleen had been extirpated, and all had died save one.

DR. HARRIS said that the case of recovery after operation for removal of a leukæmic spleen spoken of by Dr. Goodell had occurred under Dr. Franzo-

lini, of Medina, in Northeastern Italy. The proportion of leucocytes was small and probably accounted for the recovery of the patient. The diagnosis had been made before the operation.

DR. PARRISH had a few years ago seen a case of the late Dr. Wallace's, in which a diagnosis of fibroid of the uterus had been made. A tumor the size of the two fists was found near the side of the uterus. The patient developed peritonitis and was tapped by the assistant physician; some dark fluid was withdrawn. Death took place a few months after, the peritonitis having been cured. At the autopsy the spleen was found adherent to the uterus and to the pelvic brim.

DR. GOODFELL called attention to the hæmoptysis and hæmatemesis in his case, which were the usual symptoms of a leukæmic spleen; but he had not been informed of them until after the operation had been performed, and therefore he did not have that clue towards forming a diagnosis.

(To be concluded.)

CHICAGO MEDICAL SOCIETY.

Stated Meeting, January 16, 1888.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

(Concluded from page 210.)

CASTS OF THE TRACHEA AND BRONCHIAL TUBES

were exhibited by Dr. F. E. Waxham, who said: The specimen I have to present is a membranous cast of the trachea and of a number of the bronchial tubes. I take the liberty of presenting this specimen because it is very rare, indeed, that we succeed in securing a specimen of such extent as this.

The history of the case is this: The child, a little girl of 4 years, had a very mild attack of laryngeal diphtheria. She was convalescing nicely when the occurrence of a croupy cough and sawing respiration indicated very plainly that the larynx was becoming invaded, and within thirty-six hours it became necessary to perform intubation in order to prevent impending suffocation. For the first twelve hours after the operation the child did very nicely indeed, when a portion of the membrane became detached and the tube was expelled. It was necessary to at once reintroduce the tube, and the membrane was pushed down ahead of it; the child became blue, was unable to breathe, and the tube was removed and this small cast was expelled. In the course of an hour it was necessary to reintroduce the tube on account of increasing dyspnoea. The child apparently did well for twenty-four hours, after which time there was a peculiar hoarse, frequent cough, which was induced with every change of position. This indicated loose membrane below the tube; the membrane was not entirely detached, but simply loosened, did not occlude the tube entirely, but sufficiently to give rise to this peculiar cough. It was deemed unsafe to leave the child in this condition, fearing the sudden detachment of the membrane and immediate suffocation, consequently the tube was removed, and after struggling and

strangling, and coughing violently for a few moments, this large cast was expelled, which is a perfect membranous cast of the trachea and the large bronchial tubes. After the expulsion of this cast, it soon became necessary to reintroduce the tube, and the child did well for another twelve hours, when there was detachment of still more membrane, and it became necessary to at once remove the tube. The tube was removed and still the child was unable to expel the membrane. There was simply partial detachment of the membrane, it had curled up in the trachea and the child was unable to expel it. The child became blue and apparently on the point of suffocation, the tracheal forceps were introduced by the mouth, and a strip of membrane one and one-half inches in length was removed with the forceps, with immediate relief. In the course of an hour or so it was necessary to reintroduce the tube. The child died about twenty-four hours later from extension into the smaller bronchial tubes.

This is another cast of the trachea, not as extensive as the other, and yet a perfect cast of the trachea. When we have this tendency to extensive and deep exudation of false membrane, I believe the case almost invariably terminates fatally; there may be exceptions, occasionally a child after the expulsion of such a large cast may recover; there may be no reformation of the mass, and it is possible that the child may recover; yet these exceptions are few and far between, the termination is almost invariably fatal.

In considering these specimens an important question arises: Is it possible by any known method of treatment to limit or prevent the tendency through this extensive exudation after tracheotomy or intubation? We are all well aware of the fact, that the greatest danger after tracheotomy and after intubation is the extension of false membrane below the tube into the bronchi. I believe that by the use of the rubber coil, by the use of aconite, or veratrum viride or digitalis, it is possible to limit or control this tendency to extensive exudation. In this case no preventive treatment was instituted, but I shall no longer fold my hands after performing an operation and state that if the membrane extends below the tube the child will die, if it does not the child will get well. But I believe it is our duty to use every method possible to prevent or control this tendency to exudation. I believe that veratrum or aconite is indicated to keep the pulse below normal. It is particularly indicated in those cases where the system is not exhausted by the diphtheritic disease.

DR. J. A. ROBISON: As this was pharyngeal diphtheria, I can see very readily how the extension of the membrane down into the trachea occurred. It is, I believe, a fact that fibrinous casts occur in the trachea and bronchial tubes more frequently than diphtheritic casts. This fact, however, does not influence the treatment which should be adopted, but it does influence the method of operating somewhat, as, for instance, if we are satisfied that it is a case of diphtheritic exudation, we should favor the intubation operation rather than tracheotomy, because one of the great troubles in tracheotomy is the extension

of the diphtheritic membrane from the tracheal wound, whereas, in intubation we would not have this difficulty. And it does not seem to me in intubation we would be as apt to have the extension of the membrane downwards, as in tracheotomy. The great danger in intubation is the fact that the membrane is already there, while in tracheotomy there is a wound which is the starting point for infection. In this case I think the doctor has suggested a good method of procedure. Where intubation has been performed and it is discovered that there is an extension of the membrane into the trachea the proper thing is, on the appearance of dyspnoea or cyanosis, to remove the tube and in case the membrane is not expelled to use the tracheal forceps.

It has occurred to me that in addition to the remedies which Dr. Waxham has suggested, it might be well to try the effect of mercury. It is stated as a therapeutic fact by most authorities on the subject, that mercury has an effect in lessening fibrinous exudation, and it seems to me that it facilitates the elimination of these diphtheritic or fibrinous exudations by giving mercury to the point of salivation. Another remedy which might be used for lessening the heart-action and engorgement of the blood-pressure in the lungs, is calabar bean. This is a remedy which the profession uses very little except in tetanus, and yet I have noticed in several cases, especially of oedema due to catarrhal difficulties, that calabar bean given until it lowers the pulse from ten to fifteen beats per minute lessens engorgement of the lungs, and in cases of bronchitis where there is a good deal of swelling of the bronchial tubes, where there are sibilant and mucous râles, I have noticed these disappear very promptly on the administration of calabar bean, and it seems to me that it would be a valuable drug to try in these cases. The question arises in my mind, whether, when there is exudation or casts in the trachea or bronchial tubes, the administration of emetics is advisable in those cases where there is quite a degree of exhaustion, yet we can facilitate the expulsion of the casts by emetics if the patient is not too much exhausted.

DR. HOLMES: I wish to ask if there is not a way of introducing into the trachea tube, connected with a vacuum and by suction, engaging the membrane so that when the tube is withdrawn the membrane is withdrawn with it.

DR. WAXHAM: There are several methods of removing false membrane from the trachea. I do not know that there is an instrument corresponding to the one referred to. One is fitted with a rubber bulb at one end of a staff which is introduced into the trachea and then expanded, and by withdrawing the staff you remove the false membrane. Another instrument corresponds with the one that is usually employed in removing foreign bodies from the oesophagus. In all these instruments it becomes necessary to pass below the obstruction before it can be removed, and there is always the danger of crowding the membrane down ahead of the instrument instead of passing by it. I cannot see that these instruments are superior to the tracheal forceps. In the majority of cases when the tube is removed,

the membrane will be expelled by the efforts of the child in struggling and coughing, but where it is not I find that I can usually grasp the membrane with the tracheal forceps and remove it.

NEW INSTRUMENTS.

A NEW BRACE FOR BOW-LEGS.

BY CHARLES F. STILLMAN, M.D.

CLINICAL PROFESSOR OF ORTHOPEDIC SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF THE N. Y. INFIRMARY; ORTHOPEDIC SURGEON TO THE N. Y. INFANT ASYLUM.

Bow-legs is a deformity so frequently met with in practice, that an extended description of the condition is not necessary to enable the practitioner to understand the action of the brace here introduced, and which has been devised by the writer.

This brace differs very materially from the heavy double frame usually supplied by the instrument-makers (see Fig. A), which supports the limb without exercising much curative force upon the deformity itself.

As will be seen by reference to Fig. 1, it is constructed upon a new principle, viz., that of combining constant spring-pressure with the support, so that a constant force will be brought to bear upon the bowed limbs at their greatest convexities, this force being regulated by ratchets placed at the junction of the springs and the main frame of the brace (see Fig. 1).

The action of these springs is shown in Figs. 2 and 3 (although somewhat exaggerated for better il-

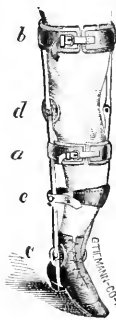


Fig. A.—The bow-leg brace usually supplied by instrument-makers.

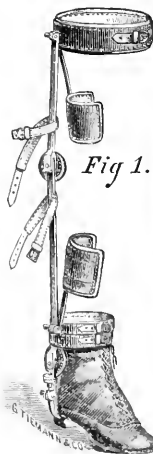
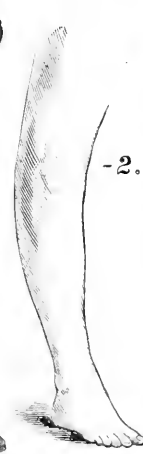
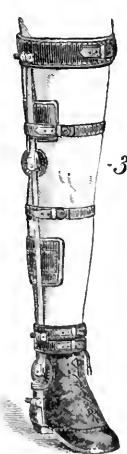


Fig. 1.



-2.



-3.

Stillman's Bow-leg Brace.

lustration), and the brace is also provided with ratchets below the ankle-joint, so that the position of the foot may be regulated in its relation to the leg, since inversion or eversion of the foot very often accompanies the condition of bow-legs.

"The Florence," 109 E. 15th Street, New York.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Cerebral Paralysis in Infancy—General Muscular Contracture in an Infant—Infantile Paralysis from Polio-encephalitis—Moral Obliquity in Childhood—A Book Agent with Small-pox.

There has recently been organized in the Academy of Medicine a Section on Pædiatrics, and its first scientific meeting was held January 25, with Dr. J. Lewis Smith, the Chairman, presiding. On this occasion the session was devoted to the subject of *Cerebral Paralysis in Infancy*, and an able paper, that he called a contribution to its study, was read by Dr. H. Seibert. In it he referred to three classes of cases in which the clinical manifestations were all due to atrophy of the brain, although in the first the trouble had its origin in an insufficient blood-supply, in the second in acute meningitis, and in the third in chronic meningitis.

In treating of the first variety he gave a detailed description of a case in which there was almost complete absence of muscular power existing from birth. Although born at full term, and without syphilitic or other taint, the infant was always puny and poorly nourished. When born the cord was found to be wound around the neck twice, and it was to the constriction thus made *in utero* that the cerebral atrophy was attributed. At 14 months of age the child died from capillary bronchitis, and when the brain was examined after death it was found that the layer of white matter was very thin, and the diagnosis of cerebral atrophy was abundantly confirmed by the microscope. In the course of his experience Dr. Seibert said he had met with four cases altogether in which there was congenital atrophy of the brain, but this was the only one in which he had been able to secure a full clinical history and verify the diagnosis by autopsy.

The second variety, he stated, was more common than the first, and of this he related two cases, in one of which a post-mortem examination was made. In this second class of cases the symptoms were similar in character to those met with in the first; but here the atrophy was due to meningitis resulting in exudation, arachnoid thickening, and sometimes moderate hydrocephalus.

The third class of cases, he said, was characterized by increased crying and moaning, with muscular contractions, and sometimes permanent episthotonos, though there were no general convulsions. The condition was due to chronic meningitis, steadily

increasing, and causing abundant exudation on the cortex; but running its course without febrile movement. He narrated two cases of this kind, occurring in a brother and sister, and in one of them the diagnosis was confirmed by autopsy. After lasting for several months the affection terminated in heart-failure; the temperature in one case falling to 96° F., and in the other to 94°. In the case in which the post-mortem was made there were no tubercles or tubercle bacilli found.

At the meeting two cases of great interest were presented by members of the Section. The first one, by Dr. A. Caille, was one of *General Muscular Contracture in an Infant of Six Weeks*. The parents were both healthy, and this was the third child of the mother. The other two children were strong and well-developed in every way. This infant was born at full term, and the head was comparatively large, with a decided flattening on one side of the cranium; but the rest of the body was small and shrunken in appearance. The jaw, which was turned slightly to one side, could be opened to only a very limited extent (so that the child was unable to suckle), and there was general contracture of the muscles of both the upper and lower extremities.

Dr. A. Jacobi, after an examination of the child, which was exhibited to the Section, said that the condition present appeared to him to be the result of a meningo-encephalitis which had occurred during fetal life. The contracture of the jaw somewhat resembled that seen in incipient trismus, although the spasm was not so marked as in that affection. The appearance of the cranium was very much like that met with in cranio-tabes in children a year or more old. He thought it was doubtful whether galvanoelectric treatment would be of much service in such a case, and that an unfavorable prognosis must be pronounced; although a certain proportion of children presenting the condition vested in this infant (which was undoubtedly very rare), recovered.

The Chairman exhibited a case of *Infantile Paralysis* which he believed to be due to *polio-encephalitis*. The child was two years old, and had always been perfectly healthy, with the exception of an attack of diarrhoea, up to May last, when, at the age of sixteen months, while apparently quite well, it was seized with violent convulsions, which lasted from 6 P.M. to 3 A.M., and were accompanied with considerable febrile movement. After the stupor commonly following severe eclampsia had passed off it was found that the child had complete paralysis of the muscles on the left side of the body, including the facial muscles on that side. The recovery from the facial paralysis was complete, and took place rapidly, while there had been a gradual improvement as regards the muscles of the upper and lower extremities. At the present time the child was able to walk, though partly dragging the left leg, and there was still a spastic condition of the toes on the affected side.

Dr. Smith said that it was his opinion that some of the cases resembling this which had been reported as due to cerebral inflammation, were in reality instances of cerebro-spinal meningitis. Ever since

1871 epidemic cerebro-spinal meningitis had had a permanent foot-hold in the city, and New York children were therefore constantly liable to be attacked with it. In the present case, however, the patient was a resident of Long Island, and, consequently, not being subject to the influences giving rise to cerebro-spinal meningitis, he thought the latter might be excluded here. It was thus evident that the condition noted must have had a local cause, and, judging from the history of the case, and the symptoms described, he was inclined to the view that it was one of infantile cerebral paralysis, or polio-encephalitis, described by Strümpel. One of the characteristics of this affection, according to the author named, was that the tendon reflex was not only not impaired, but became exaggerated, and this was found to be the case in the present instance.

Dr. Sachs said it appeared to him that simple meningeal hæmorrhage would offer a more satisfactory explanation of the phenomena noted in this case than polio-encephalitis. As a result of the latter condition there almost always followed more or less mental impairment, while after meningeal hæmorrhage the condition of the intellectual faculties, as a rule, remained unaffected. Still, the exact diagnosis was difficult to decide in such a case, and he thought it would be impossible to arrive at any definite conclusion here until an investigation of the electrical relations presented had been made.

Dr. Jacobi said that after hæmorrhage the presence or absence of mental impairment would depend, first, on the size of the clot; and second, upon the amount of consecutive inflammation. When there was much mental impairment, it was to be inferred that there had been considerable encephalitis following the hæmorrhage. In this case, he said, he was very much inclined to think that the severe convulsions gave rise to the hæmorrhage, which caused the paralysis. As to the advantage of studying the electrical relations here, he did not believe it would throw much light upon the diagnosis.

Dr. Smith having stated that it was the marked febrile movement described as accompanying the attack of eclampsia which had principally led him to decide in favor of polio-encephalitis, Dr. Landon Carter Gray, of Brooklyn, said that the exact diagnosis of hemiplegia in children was attended with much obscurity. Personally he was very doubtful whether the condition described by Strümpel occurred very often, and he believed that the statements which this authority made were founded to a large extent on mere speculation. The most that we could say was that in children the site of the trouble was apt to be in the cortex of the brain, and usually in the motor region. It was generally impossible to make a differential diagnosis, and at autopsies he had more than once had occasion to congratulate himself that he had not attempted during life to decide between encephalitis and meningitis. The whole matter was entirely unsettled, and in the present state of our knowledge, on account of the great liability to make mistakes, he thought it was more scientific not to venture upon a precise diagnosis in such cases. From a practical point of view it made very little

difference what the exact pathological condition present was.

As an instance of moral obliquity in childhood, the case of the little girl who recently made several attempts to burn the Hospital for Ruptured and Crippled, without the slightest ostensible pretext, has not often been excelled. On the evening of the last Sunday in January she really succeeded in causing quite a serious conflagration, and it was only by the presence of mind of the physicians and nurses of the hospital, and the powerful and efficient services of the Fire Department, that the inmates were rescued from the burning building, while the head cook of the institution, whose presence in the house no one seemed to think of until too late, was suffocated in her bed. The sacrifice of a human life would have seemed sufficient to at least deter the youthful incendiary from any further attempts in this direction, but, undaunted by the catastrophe, she made four or five more during the next few days, when she was finally detected and a stop was put to her pleasing methods of amusing herself. The child, who is 11 years of age and has been under treatment for torticollis in the hospital for nearly three years, is said to have always been unusually bright and intelligent, and to have become a general favorite among the inmates and attendants on account of her pretty face and attractive manners.

A case just brought to light illustrates in a striking manner the way in which people in a large city may be exposed to the danger of contagious diseases without any suspicion on their part or of those liable to communicate the infection. A book agent applied at the dispensary of the New York Polyclinic for treatment for what he supposed was some ordinary form of skin disease, but which was found on examination to be small-pox. After being removed to the Reception Hospital the man stated that he had been sick ten days, and that during the whole of that time he had been canvassing for subscriptions to a book; visiting mainly banks, insurance companies and other business offices in the lower part of the city.

P. B. P.

INFLAMMATION ABOUT THE CÆCUM.

Dear Sir:—The subject of inflammation about the cæcum has always been one of intense interest to me, and I have therefore greatly enjoyed the series of papers read before the Philadelphia County Medical Society and, with the discussions thereon, published in *THE JOURNAL* for January 21. During the past four years it has been my fortune to have charge of five cases of cæcal or pericæcal inflammation; and while I do not, of course, expect my opinion to carry much weight when opposed to that of so excellent an authority as Dr. Thos. G. Morton, I desire to place on record my protest against the summary manner in which he condemns the use of the aspirator in these cases.

In my first case—which I did not see until the trouble had existed a week or ten days—there was a very pronounced enlargement in the cæcal region, with flexion of right thigh, etc., and the diagnosis was

plain. The aspirator was used on several successive days, bringing away on each occasion several ounces of fecal-smelling pus. As there was no diminution in the amount of pus formed, a free incision was then made into the tumor and good drainage secured. The result was death from acute peritonitis.

In two cases following this I used the aspirator *early*—that is, as soon as the diagnosis was definitely made—and in each of these cases a small amount (not to exceed 1 drachm) of pus was obtained, and from the hour of the aspiration convalescence began.

In the other two cases there was no well-defined tumor, and they were treated with opiates, warm fomentations, and the internal administration of calcium sulphide, with recovery after about three weeks in each case.

While this is a very limited experience in this disease, it has been large enough to convince me, at least, that the aspirator has a place in the treatment. Certainly the early use of this instrument is attended with less risk than would be the case from laparotomy. Besides, it in no way interferes with the subsequent abdominal incision, if the aspirator fails to give relief.

I notice that Dr. Morton, as well as several other recent writers, condemn the old plan of treating peritonitis and kindred abdominal affections by the administration of opium, and urges instead the use of saline purgatives. This seems like progress indeed! and if this new plan is at all successful "down East," I can only account for it on the theory that people in that region are differently constructed from those in the "wild, woolly West." I have several times known of the purgative plan having been tried in this region of country, by men who were commonly called irregular practitioners, and the result was in each instance very disastrous to the patient.

M. G. SLOAN.

Dexter, Iowa, January 31, 1888.

PTERYGIUM: A NOTE ON ITS CAUSATION AND TREATMENT.

Dear Sir:—The comparatively recently promulgated theory of Poncet that pterygium depends upon the development of a microorganism is of sufficient importance to be worthy of the support or antagonism of confirmatory or controverting facts, and as bearing upon this question I offer for consideration the following case:

Jan. 3, 1887, Walter M., *et. 15*, presented himself for treatment with the following history: He had been a puny infant, and at 3 years of age there was noticed upon the outer aspect of either eye a small tuberculated eminence at the corneal margin, from which, as an apex, there spread out toward the outer canthus a triangular mass of vascular and fibrous tissue. The cornea becoming more involved they were excised, four years later, by a surgeon of Indianapolis. Immediately upon the cicatrization of the wounds it became evident that the disease had not been eradicated, inasmuch as it began to return and within a few months had attained its former proportions.

On examination it was found that the elevated

apex was located just within the corneal margin of either eye, beyond which was a milky haziness involving one-half of the corneal surface of the right eye, and one-third of that of the left. The bases of the triangles were of considerable breadth, and towards the apices ran numerous prominent blood-vessels. The growths were soft, and with none of the fibrous material said to have been present before the first operation, and which is usually present in pterygia.

After preparatory treatment the patient was placed in the operating chair, a 4 per cent. solution of cocaine instilled into the right eye, the diseased mass thoroughly crushed and lacerated with toothed forceps and calomel applied to the raw surface, which local application was continued at intervals subsequently. Considerable irritation followed but the growth rapidly and completely disappeared. Three weeks later the opposite eye was subjected to the same procedures and with like successful result. The cure remains perfect.

This case, although it does not demonstrate the existence of microbes in the diseased tissues, yet it offers strong inferential evidence of their presence and that they were destroyed by the germicide, calomel. The laceration of the tissues may have allowed access of the salt to the parasitic colonies.

EDWARD F. WELLS, M.D.

Shelbyville, Indiana, Feb. 13, 1888.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

The Thirty-ninth Annual Session will be held in Cincinnati, Ohio, on Tuesday, Wednesday, Thursday and Friday, May 8, 9, 10 and 11, commencing on Tuesday at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies as are recognized by representation in their respective State Societies, and from the Medical Department of the Army and Navy, and the Marine Hospital Service of the United States.

"Each State, County, and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number: *Provided*, however, that the number of delegates for any particular State, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Secretaries of Medical Societies, as above designated, are earnestly requested to forward, at once, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries are by special resolution, requested to send to him, an-

nually, a corrected list of the membership of their respective Societies.

Sections.—"The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including such suggestions in regard to improvements in methods of work, and present, on the first day of its annual meeting, the same to the Section over which he presides. The reading of such address not to occupy more than forty minutes. . . ."—*By-Laws.*

Practice of Medicine, Materia Medica and Physiology: Dr. —, Chairman; Dr. N. S. Davis, Jr., 65 Randolph St., Chicago, Ill., Secretary.

Obstetrics and Diseases of Women and Children: Dr. Eli Van De Warker, 45 Montgomery St., Syracuse, N. Y., Chairman; Dr. E. W. Cushing, 1 Hotel Pelham, Boston, Mass., Secretary.

Surgery and Anatomy: Dr. Donald McLean, 72 Lafayette Avenue, Detroit, Mich., Chairman; Dr. B. A. Watson, 124 York St., Jersey City, N. J., Secretary.

State Medicine: Dr. H. B. Baker, Lansing, Mich., Chairman; Dr. S. T. Armstrong, U. S. M. Hosp. Service, Secretary.

Ophthalmology, Otolary and Laryngology: Dr. F. C. Hotz, 181 Clark St., Chicago, Ill., Chairman; Dr. Edw. Jackson, 215 S. 17th St., Philadelphia, Pa., Secretary.

Diseases of Children: Dr. F. E. Waxham, 3449 Indiana Ave., Chicago, Ill., Chairman; Dr. W. B. Lawrence, Batesville, Ark., Secretary.

Oral and Dental Surgery: Dr. J. Taft, Cincinnati, Ohio, Chairman; Dr. E. S. Talbot, 125 State St., Chicago, Ill., Secretary.

Medical Jurisprudence: Dr. E. M. Reid, 243 N. Fremont St., Baltimore, Md., Chairman; Dr. C. B. Bell, Suffolk, Mass., Secretary.

Dermatology and Syphilography: Dr. L. D. Bulkley, 4 E. 37th St., New York, Chairman. Dr. S. F. Dunlap, Danville, Ky., Secretary.

A member desiring to read a paper before a Section should forward the paper, or its *title* and *length* (not to exceed twenty minutes in reading), to the Chairman of the Committee of Arrangements at least one month before the meeting.—*By-Laws.*

Committee of Arrangements.—W. W. Dawson, Cincinnati, Ohio, Chairman.

WM. B. ATKINSON, M.D.,

Permanent Secretary.

Philadelphia, 1400 Pine St., S. W. cor. Broad.

SPECIAL COMMITTEES TO REPORT AT THE CINCINNATI MEETING OF THE AMERICAN MEDICAL ASSOCIATION.—As appears from the programme of the general sessions, published last week, there are three special committees, in addition to the standing committees, to report at the next meeting of the American Medical Association. The membership of these special committees is as follows: Committee on Feticide, and Measures for its Prevention, I. N. Quimby, of New Jersey; W. B. Atkinson, of Pennsylvania; W. H. Byford, of Illinois. Committee on Duties Com-

monly Exercised by Coroners, H. O. Marcy, of Massachusetts; J. H. H. Burge, of New York; W. W. Dawson, of Ohio. Committee on Dietetics, E. A. Wood, of Pittsburg, J. T. Whittaker, of Cincinnati and F. Woodbury, of Philadelphia.

MISCELLANEOUS.

THE MISSISSIPPI VALLEY MEDICAL MONTHLY, published at Memphis, Tenn., has changed its name to the *Memphis Medical Monthly*, but continues, as heretofore, under the able editorial management of Drs. Sim and Neely. The change of name is a decided improvement.

THE GERMAN CONGRESS AT WIESBADEN.—The seventh annual German Medical Congress will meet on April 9 to 12 at Wiesbaden, under the Presidency of Professor Leube, of Würzburg. The following subjects for discussion are announced: "Chronic Diseases of the Heart-Muscle, and their Treatment," by Oertel, of Munich, and Lichtheim, of Berne; "Alcohol as a Remedy," by Binz, of Bonn, and von Jaksch, of Gratz; "Prevention and Treatment of Asiatic Cholera," by Cantani, of Naples, and A. Pfeiffer, of Wiesbaden. Papers are promised on: "Floating Heart" (Wanderherz) by Rumpf, of Bonn; "Experimental Researches on the Mechanism of Respiration," by Unverricht, of Jena; "Combined Degeneration of the Spinal Cord," by Adamkiewicz, of Cracow; "Experimental Contributions to the Dietetics of Digestive Disorders," by Jaworski, of Cracow; "Treatment of Basedow's Disease, and on the Diagnosis of Renal Tumors," by Stillier, of Buda-Pesth; "The Excretion and Solution of Uric Acid," by E. Pfeiffer, of Wiesbaden; "The Pathogenesis of the Epileptic Fit," by Binswanger, of Jena; and "On Cryptogenetic Septico-Pyæmia," by Jürgensen, of Tübingen.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM FEBRUARY 11, 1888, TO FEBRUARY 17, 1888.

Capt. Wm. H. Arthur, Asst. Surgeon, leave of absence extended two months. S. O. 35, A. G. O., February 13, 1888. First Lieut. Nathan S. Jarvis, Asst. Surgeon, ordered from Ft. Lewis, Col., to Ft. Leavenworth, Kan. S. O. 30, A. G. O., February 7, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING FEBRUARY 18, 1888.

Asst. Surgeon F. W. Olcott, detached from the "Minnesota," and to the "Atlanta."
Surgeon T. C. Heyl, ordered to the receiving ship "St. Louis."
Surgeon H. M. Martin, detached from the "St. Louis" and to the "Swatara."
Asst. Surgeon Chas. F. Webster, ordered to the receiving ship "Vermont."
Asst. Surgeon James G. Field, detached from the "Vermont" and to the "Swatara."
P. A. Surgeon Robert Whiting, detached from the "Iroquois" and to the Coast Survey.
Asst. Surgeon Elmer C. Tracy, resigned, to take effect immediately.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING FEBRUARY 18, 1888.

P. A. Surgeon Eugene Wasdin, relieved from duty at Marine Hospital, Chicago; ordered to Marine Hospital, Mobile, Ala. February 16, 1888.
Asst. Surgeon Seaton Norman, relieved from duty at Marine Hospital, New York; to assume charge of the Service at Evansville, Ind. February 6, 1888.

THE
Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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CHICAGO, MARCH 3, 1888.

No. 9.

ADDRESS

ON

THE PROGRESSIVE AND CONSERVATIVE SPIRIT
IN MEDICAL SCIENCE.

The Annual Address Delivered before the Boston Gynecological Society, December, 1887,

BY HORACE C. WHITE, M.D.,
OF SOMERVILLE, MASS.

In the broad domain of medical science there is room for many laborers; each may cultivate his chosen field for his own profit and for the general good. The historian records the discoveries and inventions of the past, relates the rise and overthrow of theories, and teaches us of the errors, as well as the truths, which have been promulgated. He that collates from reports and statistics furnishes sometimes important, and sometimes unreliable, data upon which to form opinions and theories.

The investigator, whether his researches are in the laboratory or by the sick bed, is often discovering new facts and frequently advancing new theories. These theories are put to the test and approved or condemned, by him who stands in the presence of disease and death, and who, furnished and equipped by the results of the labor of his predecessors, and his own experience, takes the responsibility to act. Knowledge is vast and life is short. Each in his own sphere may act his part.

The advanced thought of to-day is the conservatism of to-morrow. The winnowing sieve of experience separates the grains of truth from the chaff of error; the former is eternal, the latter is the rubbish of the past. The world is full of books, but a not very large volume would contain all well proven facts. The late Prof. Cleveland, of Bowdoin College, gave as the best definition of science, "Classification and induction." One of his successors defines Natural Science as "that theory which will explain most of the phenomena."

The first definition is correct for exact science only, otherwise we may classify well proven facts, and those, often warped and twisted to prove theories which we have been taught, with what time proves to be but error. We must take the second definition to apply to Medical Science, if indeed it yet can be called a science.

Theories must frequently be changed with increasing knowledge. New facts, both physiological and pathological, require an almost continual readjustment, and often a radical change in theory.

The microscope is revealing hitherto hidden mysteries. Collateral sciences are developing unknown forces, and opening up new fields of investigation, while more scientific observation and careful recording of cases gives us much data upon which to revise long-unchallenged opinions. But not until we can comprehend that seeming impassable barrier, a want of knowledge of the vital force, or can get some conception of the origin and nature of force as applied in the natural sciences, can we expect to attain anything like permanence in our theories. Carlisle says: "Science has done much for us, but it is a poor science that would hide from us the great, deep, sacred infinitude of Nescience, whither we can never penetrate, on which all science swims as a mere superficial film." "The world," he says, and he might with equal truth have said the human body, "after all our science and sciences, is still a miracle, wonderful, inscrutable, magical and more, to whosoever will think of it." And yet each generation goes building up new theories and fortifying them with facts, both seeming and real, until its successors, or the advanced thinkers of the day, tear them down to build anew.

Against all these innovations stands conservatism, defending the theories of the past as a patriot defends home and country; and not only standing on the defensive, he sometimes attacks what he believes to be his enemy, with all the power at his command, using even sometimes the sharp sword of ridicule and sarcasm.

Have not these theories stood the crucial test of experience? True, they sometimes failed, but was not the failure merely an exception so conveniently believed necessary to prove the rule, or explained as an accident, which might have been avoided?

These well-tried theories he is loath to give up even when, in the light of new truths, another will explain more of the phenomena.

"My very chains and I grew friends,
So much a long communion tends
To make us what we are."

The earnest seeker after truth should be both progressive and conservative.

This is an age of brilliant scientific investigation and dazzling theories, and while we should not be captivated by their mere brilliancy, we should give them an unprejudiced examination and an impartial judgment. Koch, Pasteur, and others, by their investigations and speculations in biological germs, have given a new impetus to scientific thought in its

relation to pathological processes. New theories have been founded and old theories threatened. Honest conservatism will not be hasty to accept the new, but it will be ready to listen, to examine, and to acknowledge that which time and experience prove.

All must acknowledge that the practice which has grown out of the germ theory so ably taught by Lister and his zealous disciples, has proved that scrupulous cleanliness is an essential factor to success in all surgical operations, and that when experience has eliminated some of the hasty conclusions, much of value will be left, and that many of the phenomena of pathological processes are best explained on these theories. Scientific thought is ever progressive. New theories are evolved from the old. "The originals," says Emerson, "are not original."

There should be nothing but generous contention between the progressive and conservative scientist. All new discoveries or innovations upon the customs or thought of the times are liable to encounter an ungrateful and often persecuting spirit. The torture of Galileo, the imprisonment of Columbus, the ridicule and misrepresentation with which the new discoveries of Harvey and Jenner were received by even the scientific men of their day, are only illustrations of the fact; nor can these examples be credited wholly to the ignorance or bigotry of the past; the same spirit often shows itself in some form at the present day.

Some of you gentlemen can remember the abuse heaped upon some of the most eminent surgeons of Boston when they first tested the anæsthetic virtue of sulphuric ether, and this severe criticism, too, by some of the leading medical journals of this country. For the benefit of younger members, I quote one of the many criticisms of that day:

The *Philadelphia Medical Examiner*, after detailing the reports of its trial by Drs. Warren Haywood and Bigelow, says: "We are persuaded that the surgeons of Philadelphia will not be seduced from the high professional path of duty into the quagmire of quackery by this will-o'-the-wisp; and, if any of our respectable dentists should be tempted to try this new patent medicine, we advise them to consider how great must be the influence of an agent over the nervous system, to render a person unconscious of pain—the danger there must necessarily be from such overpowering medication; and that if a fatal result should happen to one of their patients, what would be the effect upon their conscience, their reputation, and business, and how the practice would be likely to be viewed by a Philadelphia court and jury? We cannot close these remarks without again expressing our deep mortification and regret that the eminent men who have so long adorned the profession in Boston, should have consented for a moment to set so bad an example to their younger brothers as we conceive them to have done in this instance. If such things are to be sanctioned by the profession, there is little need of reform conventions, or any other efforts to elevate the professional character; physicians and quacks will soon constitute one fraternity."

How oddly this sounds when we remember the priceless boon to suffering humanity and the inestimable value to surgical science which the discovery of the anæsthetic virtues of sulphuric ether has been. Shall we not, then, take warning by the past, and, while we may be conservatively slow in accepting new theories or in attempting dangerous experiments, we should be equally careful not to hastily condemn every innovation upon the accepted theories and practices of the past, honestly seeking after truth and fearlessly defending it. The rapid growth of medical societies and their divisions into the various specialties, during the past few years, gives opportunity for full and frequent discussion on topics of interest to the profession. New and old theories must stand on their merits. Their disciples and defenders must at all times be ready to give a reason for their faith and defend it from assault; here each has a chance to question and demand proof, and each has an opportunity to prove, illustrate, and relate his experience. If it possess merit it will withstand all the arguments which can be brought against it, or all the ridicule which may be heaped upon it, and come out like wheat from the winnowing mill or new coins from the mint; but if it is wanting in merit it will soon take its own place among the heaps of useless rubbish with its kindred companions of exploded dogmas and worthless inventions. Such free discussions cannot but be of great value to true scientific knowledge if carried on with no feeling but that of generous contention and for disinterested purposes.

The past year has been a memorable one in its influence upon society work, and in the impulse which has been given to the scientific study of medicine in this country.

The meeting of the Ninth International Congress, at Washington, bringing together as it did eminent scientific men from different parts of the civilized world, each contributing by his presence, and many by their labors, to enrich the feast of medical scientific thought and fraternal relations. The amount of valuable original work was not small, and if, as Lowell says, "Originality consists quite as much in the power of using to purpose what it finds ready at hand, as in that of producing what is absolutely new," then the amount of original work was indeed vast as well as valuable. Not alone in the work there produced will the influence of the Congress be felt, but by the stimulation to investigation and study which will be felt, may we not hope, for many years to come. The Section of Gynecology was ably sustained, and the enthusiastic attendance upon its meetings proved the interest which was felt in this department of medical science. Much credit was due, and cordially awarded to, the President, Dr. Marcy, an honored member of our Society, whose indefatigable labor and eminent ability in organizing the Section, and whose courteous manner in presiding, did so much to deserve success. He was ably assisted by several other members of our Society, by many eminent gentlemen of this country and from abroad. Notably among those who were interested in this Section and whose acknowledged

rank in the profession in the countries which they represented gave great interest to their papers and discussions, were Drs. Martin, of Berlin, Grailly Hewitt, of London, Reed, of Glasgow, Apostoli, of Paris, and Cordes, of Geneva, with many others of first rank in this and other countries. With this array of talent so well organized, the meetings were interesting and profitable. Among the subjects discussed which have been considered by our Society with interest during the past year, was that of uterine myoma. Its treatment, in suitable cases, by ergot, was ably presented, as also by electricity, which called forth much discussion. Dr. Apostoli's method of using electricity in gynecology was fully explained and discussed. Dr. Martin's operation for vaginal total extirpation of the uterus for carcinoma, which several of you gentlemen had the pleasure of witnessing while he was in Boston, was elaborately explained and illustrated; but space will not permit me to give even a synopsis of what was presented of interest to our Society.

The Gynecological Society of Boston can and ought to do efficient service in its important and honorable field of labor. Its talents are versatile, its spirit both progressive and conservative. It has in its membership ardent and enthusiastic investigators, men who do not feel obliged to stop where their predecessors did, or to take as proved all they have been taught, but who, with clear heads and steady nerves, are carefully exploring in untrodden paths by the light of advanced scientific thought and with all the appliances of modern art. It has also men with the experience of years upon them, men who have had grand success with old theories, and who have a right, by reason of their past success, to be conservative and hold fixed opinions. Some who have spent much time in the hospitals and laboratories studying their specialties with the best advantages and under the great masters of our art, and some who, although less favored, perhaps, in these respects, have been taught independence and self-reliance from necessity while treating all "the ills which flesh is heir to" in country practice where they were obliged to act with the best light they had and watch the results with no one to counsel them or share the great responsibilities, and some who have just entered upon the responsible duties for which they have been for years preparing themselves, full of enthusiasm and hope. Our Society is also honored by having in its membership, ladies, possessing not only the education and experience of the sterner sex, but also a keener sense of the wants and of the peculiar nature of the disease of which our specialty calls upon us to treat.

In our list of corresponding members may be found the names of gentlemen who are known the world over, and who are acknowledged as leaders in gynecological studies and practice. With this array of talent working harmoniously together, the possibilities of our Society for good to each member and the communities in which we live, are very great.

ORIGINAL ARTICLES.

UTERINE MOLES.

Read before the German Medical Society of Philadelphia, February 13, 1888.

BY EDWIN ROSENTHAL, M.D.

ASSISTANT DEMONSTRATOR OF CHEMISTRY JEFFERSON MEDICAL COLLEGE; FORMERLY PHYSICIAN-ACCOCHEUR TO THE WOMAN'S LYING-IN HOSPITAL OF PHILADELPHIA, ETC.

The most important of the internal organs of generation is the uterus. Its structure, anatomical character, physiological attributes and pathological changes have received the most attention from the zealous investigation not only of the obstetrician and gynecologist, but of the physiologist; and last, but not least, the pathologist. The peculiar and especial office that places it in the foremost rank of the anatomical structures in the woman is that of reproduction. After copulation, should fecundation take place, it then becomes the nest upon which the fecundated ovum rests, grows, matures, during that period which we term gestation, and at the expiration of this nearly uniform period it expels its contents: labor; and then resumes again its normal size and functions. These changes comprise a normal pregnancy, so familiar to you all.

But this evening I will speak of the pathology of pregnancy; that is, of one of the functional derangements that occur in the pregnant woman, in which there may be an accidental lesion of the ovum, spontaneous to the ovum, which always ends in death, and which we will designate as Molar Pregnancies.

I must, however, preface my remarks with this observation: that whilst there are certain forms of moles termed the false or spurious moles, which have nothing at all to do with conception and which, for the proper understanding of our subject, must be spoken of and described, I may be open to your criticism by speaking of these affections under the term pregnancy; but as I before observed that the uterus expels its contents by what we term labor, and as labor is the ultimate result of pregnancy, the expulsion of a spurious mole has the same physiological action as that of the true mole, probably and properly termed a spurious pregnancy; at any rate, the women suffer pain quite equal, and a virgin will remain a virgin, a mole notwithstanding.

Historical Sketch.—Moles were known to the earliest writers. This can be attested by the fact that Hippocrates, Aristoteles and Galenus had been acquainted with them; speaking of them and understanding them to be degenerated ova, which we to-day know as vesicular or fleshy moles. The Arabians gave a greater field to their designation of moles. They understood a mole to be not only the uterine contents, but also any tumor which might lay in the cavity or in its walls. Then again, at a later period, a difference was shown in moles, and then was spoken of true and false moles; the product of conception and not of conception.

Schenk v. Grafenberg, in 1565, was the first to describe the vesicular or hydatidiform mole (Blasenmole). The nature of this product was for the great-

est period obscure. From the end of the last century even until a recent period this was looked upon as true vesicular worms. Whilst already Ruysch (who was still uncertain whether they were a pathological product of pregnancy), looked upon these cysts as an alteration of the villi. Velpeau and Johan Müller disputed that the vesicles were true cysts. The problem: from whence originated this growth? was unsatisfactorily answered by different theories. Gierse and Meckel seek the origin of the product to be a hypertrophy of the villi (*zotten*); whilst H. Müller the exochorion, and Mettenheimer the cellular tissue. Virchow finally cleared away the obscurity and brought light on this subject. He proved that vesicular or hydatidiform moles (described also by Hildebrandt as "fibrous myxomata" of the placenta) were a hyperplasia of the mucous membrane—the elementary bases of the finer tufts of the chorion (*Chorionzotten*). Schroeder quotes cases of "diffuse myxoma" of the placenta, by Breslau and Eberth, and Spaeth and Wedl.

Moles and their Synonyms.—Obstetricians divide moles into two great classes: *a*, the false; *b*, the true moles.

True moles are subdivided, as regards their physical character, into fleshy and vesicular or hydatidiform. The fleshy are again divided into fatty, carneous (*steinmole*), etc. Moles have been designated by different names: moon-calf (*Mondkalb*); devil's brood (*Teufelsbrut*); wind-egg (*Windei*); sun child (*Sonnenkind*); Neirenkind, Kielpopf, Missgeburt, etc. By the professional they are designated by their contents: blood mole (*Blutmole*); water mole (*Wassermole*); air moles (*Luftmole*); hair mole (*Haarmole*); cartilaginous mole (*Flechsennmole*); bone mole (*Knochenmole*); and calcareous mole (*Kalkmole*).

A. Spurious Moles.—I shall speak rather briefly of this portion of my paper. As an independent affection, existing uncomplicated, I believe it to be impossible. Its mention here is to open the way for the discussion of the more important variety.

Mauriceau believes that moles could not exist without impregnation; that it was always the offspring of intercourse. In his 105th aphorism (*Traité des Maladies des Femmes Grosses*) he says: "Les femmes n'engendrent jamais des moles, si elles n'ont usé du coït." This Alexander Milne, of Edinburgh, cannot subscribe to, believing that cases occur; nay, more, having met with them, where fleshy masses have been expelled from the uteri of women who certainly never had connection. If virgins expel such things, then, they are not to be impeached; to do so would be unjust.

Various substances, organized or unorganized, may be discharged from the uterus of the virgin; such substances as clots of blood, membranous shreds, or even whole membranes, as well as fibrous materials. These may even have the shape of the uterine cavity, and may come away naturally or must be removed; and which have nothing whatever to do with fecundation, and are termed spurious moles.

Their significance is of some importance from a medico-legal view, and the utmost care should be

exercised in differentiating these false moles from true ones. Difficulty may arise when the discharged tissue is the membranes of membranous dysmenorrhœa, where this tissue may be mistaken for true decidua membranes. The circumstances attending each case should receive the earnest scrutiny of the attending physician. All circumstantial and direct evidence should be gathered: were there any previous attacks? note the absence of the signs or symptoms of pregnancy, and so on. Examine the discharged mass; should this happen to be complete, we may find the opening of the Fallopian tubes and that of the cervix, which is never observed in true decidua. The microscope, however, will determine the presence or absence of the fecundated ovum. Blood clots, polypi, and small fibroids or portions of large ones should not be difficult of recognition by naked eye or microscopic examination.

B. True Moles.—True moles are always the result of impregnation. The villi of the chorion may become distended with fluid collecting within them, causing them to swell and assume the form of rounded vesicles comparable to gooseberries or grapes, resembling hydatid vesicles, and on account of this analogy they were for a long time supposed to be true hydatids. Or an extravasation of blood may take place between the maternal and fetal structure of the fecundated ovum or into the tissue of the latter, producing a fleshy mole. The embryo may become mummified, or may speedily disappear in the early stages, and then we meet only with the membranes or appendages.

Two chief varieties of true moles are at present recognized, namely: 1, the fleshy; and 2, the vesicular or hydatidiform mole.

1. *Fleshy Moles.*—These I believe to be the most frequent. My colleagues who are acquainted with this formation and myself have met with these cases more frequently than the hydatidiform. I shall present the histories of a number of cases which I have met in practice and in that of my colleague, Dr. L. Wolff, which may describe the conditions met with:

Case 1.—Dr. Wolff's case. History incomplete. The doctor was called to a woman in absence of her regular medical attendant. She was suffering from uterine hæmorrhage. Besides this, she had painful uterine contractions. The flooding was very profuse. On examination a roundish mass was discovered engaged in the os tensi. Tamponnage and internal administration of ergot failed to remove this, although it gave rise to violent contractions. Expulsive efforts were much marked, but with no result. Dr. A., for whom Dr. Wolff was attending, returned in a few days, and afterwards informed him that the case was one of a fleshy mole, firmly adherent to the uterine fundus, which he had to detach with a blunt hook and curette.

Case 2.—Dr. Wolff's case. A German woman. History of general good health; no syphilitic or other taint. Previously treated by my preceptor, Dr. Julius Kæmmerer, who treated her for several of the kind before. They were spontaneously detached after much hæmorrhage. Dr. Wolff treated the same case with precisely the same symptoms:

previous suppression of the menstruation of two or three months, beginning hæmorrhage and pain, becoming worse as the case continued; the mass coming away naturally.

Case 3.—Dr. Wolff's case. A German woman, strong and healthy appearance, æt. 30 years. Had been complaining of uterine pains, bearing-down pains, for some time, with slight hæmorrhage which became very profuse, for which Dr. Wolff was sent for. The uterine contractions were much greater than he had previously met with. Digital examination revealed a round, soft body engaged in the os; it was firmly adherent and could not be removed between the fingers. Tampon and ergot had no effect, though frequently repeated. As the hæmorrhage continued so profusely as to endanger life, removal was proposed and consented to. This was accomplished by means of the Beecher placenta forceps after considerable difficulty, the adhesions being so firm, and effected only after twisting or rotating the mass. The adherent or pedicular portions were found quite distinct, and had undergone partially but distinct fatty degeneration.

Case 4.—Dr. Wolff's case. Mrs. C., an Italian woman with a history of a number of miscarriages. Was attended by Dr. H., who called Dr. Wolff in consultation. The doctor found the patient almost pulseless. Dr. H. was not there when the doctor arrived. He had, however, succeeded in controlling the hæmorrhage by means of the tampon and ergot. Stimulants were administered and twenty-four hours subsequently the tampon was removed by Dr. H., who insisted that the case was one of miscarriage only, and predicted that the placental residue would be found in the vagina after removal. As no fœtus had been expelled, and no history of fecundation, Dr. Wolff claimed the probability of its being a mole. Tampons failed to dislodge it, both in the first attempt or any repetition, therefore removal was consented to, and with the Beecher forceps a fleshy mole was removed, part of which had been previously broken up and removed by Dr. H. After removing all particles with the blunt hook and curette and irrigation with hot water, the hæmorrhage ceased, the uterus contracted, and a slow convalescence ensued from the extreme anæmic condition.

Case 5.—Mrs. N., æt. 35, had never borne children. Was called to see her for intense uterine pains with slight hæmorrhage. She had suppression of the menses of ten weeks' duration. Morphia was administered hypodermatically. On the third day hæmorrhage became more profuse, tamponage and ergot were resorted to, which caused the expulsion of a fleshy mole the size of an orange, round and somewhat firm, presenting an irregular surface covered with coagulated blood. When incised, the texture was somewhat compact, and in the centre was found a small cavity, lined by a serous membrane and containing a small quantity of fluid. Not a vestige of either the fœtus or cord remaining. She made a rapid recovery.

Case 6.—I was called by a midwife to see a Hungarian woman who was supposed to be laboring under a beginning miscarriage. She appeared to be about

40 years of age, well nourished and fleshy. She had been in labor about twenty-four hours, and the midwife was at a loss what was presenting, which was shared by myself. There was a slight hæmorrhage, with uterine contractions. The uterus was open about the size of a dollar, soft and pliable, and a tendency to dilate. In several hours a large fleshy mass was discharged, about the size of a fetal head, which presented the same physical characteristics as the previous case, except in the walls of the mole, which were probably 3 inches in thickness; small cavities were found filled with blood. In its centre the same cavity as in the previous case was found (which, in regard to proportion to the entire mass, might be placed as 1 to 20), lined with serous membrane and containing some fluid and nothing more.

Case 7.—A Polish woman, Mrs. H., æt. 38, mother of five children, the youngest 3 years. Had had three miscarriages, but none since the last birth. Had suppression of the menses for over a year and supposed herself to be passing the menopause. For four months has had constant dribbling of blood from the uterus with intermittent pain. I was called to see her, and on examination could easily pass my finger into the uterus. Presenting at the os, and movable, I found a mass of tissue. [This I attempted to remove with curette and blunt hook, but without success. By means of this placental forceps I was enabled to remove the mass, previously crushing it so as to remove it. It was a mole, probably one of those termed the carneous, of very dense fibrous tissue, with here and there small pellicles of calcareous deposits. The woman made an excellent recovery.

Case 8.—B. F., an English woman, æt. 33 years; well nourished; family history good. Has had four miscarriages, and then one pair twins; one year after gave premature birth to twins, both dead, probably seven month fœtuses. A year after this I was in attendance and she was safely delivered of a full term child, and with the afterbirth, seeming to be adherent, was discharged a large fleshy mass, having all the characteristics of a fleshy mole. Its size was that of an adult head; it was pliable, easily moulded, and was brought away without any difficulty. I mistook it at first for a monstrosity, but it had no resemblance in any of its features. I incised it and found a small cavity containing a small amount of fluid. This case was unique, and I might have doubted that the mass as a fleshy mole could exist with the living fœtus, but since then I have read in an excellent monograph by Alfred Wiltshire, Physician-Accoucheur to St. Mary's Hospital, London, that such a state of things was said to have occurred on the occasion of the birth of the celebrated anatomist Beclard. That, in fact, twin pregnancies may occur where degeneration affects the membrane of but one ovum.

ETIOLOGY.—As before mentioned, extravasation of the blood between the maternal and fetal structures of the fecundated ovum, or into the tissues of the latter, appears to be the active agent in the production of the fleshy mole, though it is difficult to determine the agencies whereby this condition is brought about. Diseased state of the decidua may doubtless result when pregnancy supervenes upon chronic en-

dometritis. In a case I treated wherein pregnancy supervened, a miscarriage resulted. I did not examine then, which probably I would do now, the products of this miscarriage. It is said that an effusion of blood into the maternal structures may occur from cardiac disease; though my experience teaches me that women suffering from cardiac diseases very rarely become pregnant.

Frequency.—From the number of cases presented this evening it may appear that moles of the fleshy variety are not infrequent. I am led to think that they are more frequent than one supposes. The lack of knowledge, coupled with the ridiculous faith placed in the assertions of the women who have them, leads the attendant astray. Again, their appearance, likened to that of placental tissue, especially when blood is effused into it, besides where the mummified fetus is still in existence, or the remains of the fetus, of the cord, etc., leads the physician to a diagnosis of a simple miscarriage and not that of a molar pregnancy. Fleshy moles are by far more frequent than the vesicular or hydatidiform variety, and are not an uncommon concomitant to frequent pregnancies or miscarriages.

SYMPTOMS.—The immediate symptoms are those of a threatening miscarriage. The premonitory symptoms are likened to those of the very earliest months of pregnancy. Absence of the placental souffle and the positive signs of pregnancy, with suppression of the menses, are among the signs. I and my colleague were only called at the threatening abortion. I do not believe that any positive symptoms exist by which accurate diagnosis can be made previous to its expulsion.

Course.—The course of the molar pregnancy of the fleshy variety is variable. Generally at three months nature seeks to throw off the mass. Haemorrhage comes on about this period, and then it is simply a question of time when the uterus expels its contents.

DIAGNOSIS.—The diagnosis of the fleshy mole I should deem impossible. Suspicion may arise when the patient has had one before, but as regards positiveness, I think it out of question. It can only be made when you have the tumor in your hand.

PROGNOSIS.—All the cases here quoted ended favorably. Prompt treatment should be the rule. Should danger arise from the excessive haemorrhage, the tampon is always a safe and efficient remedy. Some cases of extra-uterine moles which authorities quote, that have been met with in the ovary and abdomen, and the cyst given way, causing death, are of course unfavorable. Sometimes these cysts have opened into the bladder or bowels; the result being the same. Still, the same chances which extra-uterine pregnancies have in antiseptic surgery extra-uterine moles may have; and the prognosis modified. These cases are, happily, most rare. Wilton (*Lancet*, February, 1849) relates one case. Peritonitis may result from the misuse of instruments, causing death. Haemorrhage might, and pyæmia and septicæmia, etc., may cause death.

PATHOLOGY.—The pathology of fleshy moles is still shrouded in obscurity. Heart disease, causing an

effusion of blood; again, syphilis and other blood dyscrasie, appear to exert an influence, and perhaps the same may be said of acute specific diseases where they fail to excite abortion. Whatever may be the exciting cause, when once blood has been effused into or between the fetal and maternal structures, the vitality of the embryo is speedily compromised. The common result is abortion; but, should not the whole be thrown off, growth may take place in the remaining tissue; while the effused blood becomes organized and gives bulk to the mole. In a case of cancer of the ovary, posted by a friend, I removed some time previous what I termed a retained placenta, which was in the uterus of that unfortunate woman five months.

The maternal placenta is formed by the decidua serotina. The fetal placenta is formed by the villi of the chorion, which, having originally covered the entire surface of the ovum, atrophy over the major part of the surface, while they ramify and develop, *ad infinitum*, at the point corresponding to the serotina, where they become imbedded and constitute the vascular mass known as the placenta. To study changes in the chorion amounts to studying the lesions of the placenta, and the reverse. Now, these changes may relate to each of the placental elements, *i. e.*, the vessels and the villi.

Not infrequently a considerable effusion of blood takes place immediately beneath the amnion, encroaching greatly upon and sometimes rupturing the amniotic sac, and Cazeau (1876, page 578) gives his description of a fleshy mole as follows: "It may further happen that the placenta, maintaining its vascular adhesion with the internal surface of the organ, continues to develop after the child's death, the cord and fetus becoming atrophied, and then completely destroyed; or, indeed, the ovum may rupture, and the little product escape, leaving the membranes behind. These envelopes may undergo various modifications, but the most common is the morbid product known as a fleshy mole." The inner aspect of the cavity then presents an irregular nodular appearance, and is of deep red, almost black color. When the nodules are incised they are seen to be composed of firm blood clot. The fetal surface contains numerous blood cysts. The tissue microscopically I present here.

If not immediately thrown off, growth may continue in the tissues, and a bulky fleshy mole results. The connection between the ovum and the womb being most intimate at the placental site, changes go on most actively at that spot, and when blood is largely effused here it constitutes what is called apoplexy of the ovum. Examination of the carneous moles shows the decidua vera to be the chief seat of degenerative changes; but in all cases chorion villi may be found, though much altered by fatty and molecular matter. Fatty degeneration may be extremely marked, and in rare cases calcareous degeneration may be met with, forming what the Germans term the Steinmole; but such degeneration of other uterine bodies may occur, as fibroids, etc., and therefore clear evidence of conception should exist before it is looked upon as a true mole. Blood polypt are

occasionally met with, arising after miscarriage or delivery at full term, in which, organization having taken place and communication being established between the clot and the uterus, degenerative changes go on to the extent of calcification, whereby the so-called Steinmole may be produced.

2. *Vesicular Mole*.—The vesicular, hydatid or hydatidiform mole is the better understood, if not the more important variety of the true mole, and has received the most attention of the pathologist. I have seen it but three times, twice in one person. I will relate the cases here.

Case 1.—Mrs. S., an American lady, æt. 28 years, brunette, a little above the middle size; well nourished; had one child, æt. 5 years; and two miscarriages, one of which was twins, I attended her in both. I was engaged to attend her for what we both thought a normal pregnancy. She could not tell me how long she had been pregnant, but from indication I judged her to be about six months. Her family history is good. I have some doubts as regards her husband's morals though I have never treated him. She sent for me on account of a show. I made no examination, but treated accordingly. She increased rapidly in size, at the same time the dribbling of blood continued, and she says, she felt not at all like carrying her first child, and therefore feared that all was not right. She was confined to her bed and probably a month later I was again sent for; she having at my former visit requested me to wait until I was sent for. I saw her very anæmic, having constantly lost blood and small masses, which she told me were blood clots. Examining the abdomen by inspection and palpation revealed a boggy sensation, the abdomen had the same appearance as in dropsy; the uterus was not at all conical but seemed transversely more wide.

Digital examination revealed a protruding mass through the os, and withdrawal brought away numerous vesicles. The diagnosis of vesicular mole being explained, permission was freely granted to remove the mass, which was with some difficulty accomplished. The patient making a very slow and tedious convalescence.

Case 2.—Mrs. L., present age 42 years; at my attendance six years ago 36 years. A Russian woman, well nourished; at the present time she has given birth to thirteen living children, the oldest 23 years, the youngest 18 months; eight are still alive. She has had two living children since my attendance in 1882. She was married at the age of 15. Her husband has perfect health as regards specific diseases. When I attended her in 1882, I was called for a hæmorrhage from the uterus. This was very profuse. On examination I found a large mass filling up the whole vagina and protruding externally, which I at first mistook for a blood-clot. The tissues of the mass were easily torn in attempting removal, which was accomplished with great difficulty. The mass I removed by scooping out the tissues with my fingers, and a large quantity was thus removed. I irrigated the uterus and vagina with vinegar and water injections. Three or four days after my patient mysteriously disappeared, having forgotten to pay me, and I never saw her again until three months ago, when she

brought her youngest child to the Jefferson Hospital for treatment and our recognition was mutual. She complained of some uterine trouble, and I referred her to the Women's department. Five days afterwards I was sent for.

She was in bed; complained of slight pain and hæmorrhage, and I gleaned the following history: Since I removed the previous mole in 1882, she had been in good health, and had given birth to two living children, the youngest was 16 months old. Since then her health has been variable, and for the last five months she had constantly a uterine hæmorrhage, intermittent in character. For this she sought treatment at the hospital, and since then has had pain of variable intensity whilst the slight hæmorrhage ceased, to give place to more copious hæmorrhage for which I was sent for. On examination I found the vagina filled with a mass of tissue and blood-clots, part of which I removed at once and have here in this jar. The next day removal of other portions was undertaken, but with great difficulty; the parts being torn in the attempt. Ergot and tamponage with irrigations and curetting, enabled me in about ten days to remove the whole of the uterine contents.

My patient is making a very slow and tedious recovery and is still under treatment for symptoms of sub-involution.

ETIOLOGY.—Like fleshy moles, the etiology has not been fully explained. We are still not assured whether the cause of this variety is primarily in the ovum, or in the diseased decidua, or if it originates from the maternal cause—the blood of the mother. Ruysch, Scanzoni, and Graily Hewitt, find it in the death of the fetus; but moles have been found with living children. It is not the death of the ovum alone that can be directly the cause even if a neoplasm should ensue after such a death. That the cause may lie with the mother we have such cases on record in which the decidua is diseased, or other pathological affections of the uterus exist, and where moles are found more than once in the same woman. Virchow attributes it to endometritis, and this is the generally received opinion in Germany to-day. Virchow, Mayer, Depaul, Harkin, Puech and Hecker think that in the formation of the allantois is the origin of the anomaly, as we find cystic or vesicular or hydatidiform formation in the placenta or in the villi of the chorion. This may be reasonable to suppose the reason that one ovum may degenerate into a mole whilst the other may be perfectly normal. Charpentier, (Vol. V. p. 253, Ency. Obstet. and Gynæcol.) says: "It is probable that the myxomatous lesions begin in the abundant mucoid tissue of the villosities, and that this tissue becomes infiltrated with fluid."

Frequency.—Vesicular moles are rare, though partial degeneration of placental tissue may make it more frequent. It is found oftenest in multipara of 25 to 40 years. A molar pregnancy is apparently, to a certain extent, a predisposing cause. In some instances vesicular moles repeat themselves more than once in the same woman, sometimes after pregnancies, sometimes during pregnancies. Meyer (Virchow's Archiv. 1870, Bd. 41, p. 461) relates a case where a woman eleven times carried a mole

and at the same time a full-term child. Depaul—in the same journal—relates a case wherein a woman had a mole three successive times. Bloch (Jas. Blasenmole, Freiburg, 1869) says: "Women of advanced age show a greater tendency or disposition to moles. First pregnancies are rarely so affected. One pregnancy quickly following another point to a predisposing cause to molar pregnancies."

SYMPTOMS.—In the beginning are rarely marked. The same symptoms as of ordinary pregnancy are those most usually found. The bulk of the uterus increases with great and disproportionate rapidity. There is a tendency to the loss of ovoid form and the assumption of the globular or more transversely wide shape. Generally there is evidence of some derangement, by the appearance of a watery and sanguineous discharge, later on small vesicles come away, and then the diagnosis is clear, but in their absence diagnosis is guarded. According to Percy, there is an alternation of small hemorrhagic and watery flows, commencing in most women at the second month, and continuing at longer or shorter intervals until parturition. Gardien observes that the expulsion of hydatids is usually accompanied by hemorrhage and syncope, and Depaul has observed the same peculiarity. This mole can reach the size of a child's head and weigh 1000 to 1500 gms. or more.

Physical examination often yields important information. Palpation may give, as Leishman remarks, a significant sensation of boginess, with absence of the irregular fetal hardness. Hardening under manipulation is very significant of the uterine nature of the tumor. On examination, a doughy sensation may be experienced in the lower segment of the uterus. Should the os be open, vesicles may be felt. To the touch they somewhat resemble recent blood-clots.

Course.—From three to four months uterine contractions set in with pain, discharge of blood, serum, mucus, etc., vesicles come away and the mass is slowly discharged. It is a very tedious process, as it is a rarity for the mass to be discharged *in toto*. Generally it is discharged in pieces and the woman suffers greatly from loss of blood, shock, etc. As a rule, the whole course of this disease is from three to six months (Kleinwächter) though cases are on record where its course was prolonged to nine or ten months, or longer even than normal pregnancy. Underhill (Amer. Jour. of Obstet., 1879, p. 182) relates a case of molar pregnancy which lasted one year. It is a rare thing for a normal and molar pregnancy to take place at the same time. As an exception Caspari relates (in Virchow's Archiv. Abgang der Mole in der 20. Woche und 3 Tage später jener einer 4 monatlichen faultodten Frucht) a case in which a mole was discharged and three days later the fetus in a state of putrefaction.

DIAGNOSIS.—The diagnosis at the beginning of the disease is impossible. If the uterus enlarges too rapidly, that is disproportionate to the time; vesicular moles may be suspected. When mucus, blood, and above all, vesicles are discharged, then the diagnosis is assured. The older authors did not consider the mole as always due to pregnancy, and claimed

that the mammae did not develop. That is not the case, for Cartereau has demonstrated the abundant presence of milk. They said the mother did not feel life; but there are moles where the child is born living and at term. Finally, the uterus shows the ordinary inequalities, and all the signs of pregnancy: nausea, vomiting, etc., may be present.

PROGNOSIS.—For the mother is always grave. The source of danger is the frequency and intensity of the hemorrhage. In many cases the mother succumbs, not from development of the mole, but from hemorrhage. The only instance where death could be attributed directly to the mole is that of rupture of the uterus mentioned by Madame Boivin. The hemorrhages are usually moderate at first, and usually only become serious towards the end of pregnancy, and at the moment of expulsion. If a physician is in attendance the prognosis is more favorable than when such pregnancies are left to themselves. In some cases the vesicles are retained so closely to the uterine wall that it is with difficulty they can be dislodged, care should be taken in removing them; again, if the tumor be of extraordinary size, the prognosis should be guarded. As a rule, we should look with significance upon the size of the mole, the partial or total extraction, and the intensity of the hemorrhage, before we give an opinion. In those instances where women have had several vesicular moles, the prognosis is more favorable.

For the child the prognosis is always serious. If the fetus be not liquefied or dead, it is always injured and ailing, and ill-prepared for life.

PATHOLOGY.—It is well to state at the onset that the name "hydatid" mole is erroneous and misleading. There are no true hydatids or echinococci in it; the physical arrangement of the vesicles is different. True hydatids are closed sacs, contained one within another, while the vesicular mole is formed by sacculi growing from one another. It was formerly supposed that they grew from a common stalk, and they were likened to a bunch of grapes or currants; but for the reason given above the simile was imperfect.

The vesicles vary in size from a chestnut to a pin's head or less; usually they are about the size of small currants, and as a few may from time to time escape accompanied by more or less sanguineous discharge, Gooch's simile of "white currants floating in red currant juice," is a very apt one.

Dubois and Desormeaux describe three varieties of hydatidiform moles. 1. The embryonal hydatid mole. 2. The hollow hydatid mole. 3. The hydatid mole *en masse*.

The first variety consisting of a membrane, vesicular on its outer surface, with an internal cavity containing a fetus or parts of one, and possibly fluid.

The second kind is like the first, save that its cavity contains only fluid, and possibly a remnant of the umbilical cord, the fetus having been dissolved.

The third variety is distinguished by the enormous development of the hydatid bodies, and the more or less complete effacement of the central cavity formed by the amnion, the place of which is taken by a mass of soft, yellowish, spongy tissue.

Moles of all kinds are covered by a thick membrane, which is in immediate contact with the uterus, and which is nothing but the decidua. It has been carefully investigated by Robin, Barnes, Mettenheimer, Paget, Hewitt and others. According to Cazeau, M. Velpeau was the first to discover that the hydatidiform mole has its origin in the chorion, and the microscopical examinations of Prof. Robin exhibited still more clearly the true nature of the disease by showing that the envelope of the vesicles have all the anatomical characteristics of the walls of the villi of the chorion. They become dropsical, swell up, the pedicle of these dropsical villi is formed of the base of the villus affected. Gooch likened them to currants, Cruveilhier to grapes. These specimens show both. Mettenheimer thinks that on the outer surface of the little cysts, formed by the transformation of the cells of the villi, a new growth of villi arises, and that these again are morbidly altered into similar cysts, and so on. Dr. Graily Hewitt (London Obstet. Soc. Transac., vol. 1, p. 249) says there is no new formation at all.

All authorities agree that the vesicles grow from the chorionic villi. There is no new formation, but excessive and erratic development. Mettenheimer, Paget, Barnes, Virchow and others, concur in this view. Whether the change is the cause or the consequence of the death of the embryo is unsettled. It may be some innate morbid condition of the ovum, or some acquired defect. Dr. Hewitt thinks that the starting point of the abnormality is the death of the fetus rather than this latter is the result of the degeneration.

Leishman points out that the period within which degeneration of the chorion villi may originate does not extend probably beyond the tenth week, that being the period of greatest activity in the growth and multiplication of the villi. Later on when blood vessels have occupied the bulk of the villi this kind of degeneration seems incapable of formation. The probabilities therefore are in favor of the formation taking place in the first chorion or vitelline membrane.

Normally, only those villi that correspond to the placenta develop progressively; but if a pathological condition supervenes very early in pregnancy, they all proliferate and become hyperplastic. Abortion usually follows, but it may happen that the placenta develops normally, only a certain group of villi becoming hydatid. Usually, however, the affection is situated just at the placental site, though only a portion of the cotyledons may be affected.

In any case the affection begins as a multiplication of nuclei and cells.

Whether simple hyperplasia or a hydatid state results, it is very common to find the isolated vesiculated cells which Virchow has designated physaliphores. They are found in the epithelium as well as in the parenchyma of the villi, but they have no relation to the development of the vesicular mole. The morbid process corresponds to that described as the mucoid degeneration of cells. Virchow does not deny that some cells may disappear, or may undergo a fatty change, but they often persist in great num-

bers, and the principal accumulation is relatively large, the tissue becomes cystic in appearance. Where the fibrinous portions are in excess, a simple hyperplasia results.

Thus these tumors are formed. A villus whose normal diameter may be hardly half a line, may be dilated to half an inch or more. The larger they get the more characteristic they become of mucoid tissue. They become clear, transparent, and gelatiniform. They contain a ropy liquid which gives the reactions of mucin.

The vesicular appearance depends upon the delicacy of the liquid-filled tissue.

This development has nothing to do with the vessels, but if it occurs late in pregnancy, the vesicles may become the seat of an extremely rich capillary plexus. But vessels are usually absent, at least in eggs coming from the first month; and dropsy of the amnion and atrophy and death of the fetus occurs in consequence of the disease which cuts off the circulation (Charpentier). Hence, the different descriptions given by authors, and the three kinds of hydatid mole; they are only degrees of one and the same lesion, varying from a simple faulty conformation to complete destruction of the fetus and the cord.

The theories concerning the vesicular mole may be summed up as Duchamp says, in the following propositions: 1. The vesicular mole is entirely independent of pregnancy. 2. The vesicular mole increases under the influence of pregnancy, but is not due to a disease of the egg. 3. The vesicular mole is due to a change in the product of conception, from *a.* alteration of the vascular wall (Cruveilhier); *b.* alteration of the lymphatic vessels; *c.* dropsy of the chorionic villi (Robin, Cayla); *d.* Myxomatous degeneration (Virchow and the Germans, Ercolani, Damaschino, Cornil, Ranvier, Hirtzmann, 1874, Josephson, 1879). Of these the theory of Virchow is the accepted one, for the following reasons: 1. The normal villus contains mucoid tissue; it is not astonishing that it should hypertrophy. 2. The vesicular fluid contains mucin. According to Gscheidlen, it is composed of chloride of sodium, 3.34, phosphoric acid, 0.74, albumin, 6.12, mucin, 2.94, salts, 0.25.

Cases are on record in which a repetition follow each other in the one case, Dr. McClintock mentioned this several years ago. Again in some cases a cotyledon of the placenta may undergo such a change and the child be born at maturity alive, but generally it is carried until labor and then delivered dead. Such cases are recorded by Hunter (*Lancet*, 1846, p. 434, vol. 1), Krueger, Virchow (*Krankhafte Geschwulste*, Bd. 1, p. 405), Martin, Conche et Totan, Breus, etc. Vesicular mole can also be carried at the same time with a healthy child, as a twin which is born alive (Viadel, Boivin, etc.), and again there may be extra- as well as intra-uterine moles, as well as double extra-uterine molar pregnancy described by Jakobson (*U. H. f. G. u. f. Bb* 13, p. 122).

Barnes relates a case in which the vesicular mole was so intimately connected with the walls of the uterus that the vesicles penetrated the wall even to the peritoneum.

Schreder refers to a case by Volkmann, and one

by Jarotsky and Waldeyer in which this occurred.

The vesicular mole belongs to a class of pathological products known as myxomata. (Virchow, Cornil, Ranvier, Malassez and de Sinéty, have demonstrated the identity of the vesicular mole with myxomata of other regions.

An analogous degeneration of the placenta has been described by Virchow and Hildebrandt as "fibrous myxoma" of the placenta. Schröder quotes cases of "diffuse myxoma" of the placenta by Breslau, Eberth, Spaeth and Wedl.

A case of myxoma, or hyperplasia of the chorionic villi, is related by Dr. Sinclair, in Vol. 1, of the Publications of the Massachusetts Medical Society.

Different synonyms are: Hydatid, or vesicular mole; cystic degeneration of the chorion and placenta; dropsy of chorionic villi; myxoma of the placenta.

TIME OF THE FIRST HÆMORRHAGE AND ITS DURATION IN HYDATID GESTATION.

Names of Authors.	Time of 1st Hæmorrhage.	Time of Delivery.	Duration of Flow.
Dumaineau,	45 days	8 months	6½ months.
Mme. Boivin,	45 "	4 "	3½ "
Littre,	2 mos.	6 "	4 "
Crowfoot,	3 "	7 "	4 "
Louville,	3 "	7 "	4 "
Percy,	3 "	8 "	5 "
Mme. Boivin,	3½ "	8 "	4½ "
Pichart,	4 "	4 "	" "
Millot,	4 "	4 "	" "
Delamotte,	5 "	5½ "	15 days.
Percy,	6 "	9 "	3 months.
Bremser,	7 "	8 "	1 "
Jolly,	8 "	10 "	2 "
Bandelocque,	11 "	11 "	" "
"	16 "	14 "	" "
Rosenthal,	6 "	7 "	1 "
"	"	4 "	" "
"	11 "	16 "	5 "

DURATION OF HYDATID GESTATION. OBSERVATION IN CASES.

Women delivered	at 14 months,	1 case.
"	11 "	1 "
"	10 "	3 "
"	9 "	2 "
"	8 "	4 "
"	7 "	1 "
"	7 "	1 "
"	6 "	5 "
"	5½ "	2 "
"	4 "	3 "
"	3 "	4 "

Total, 25 Cases.

TREATMENT.—The treatment of all forms of molar pregnancies consists in the complete removal, whenever practical, of all the diseased tissue. The special treatment is of the hæmorrhage. General measures and expectant treatment if slight; tamponing if it be severe. The expulsion of a few vesicles during the pregnancy does not affect the treatment. It is a common thing to recommend oxytocics, preferably ergot, but if this fails to insure the expulsion of the mass, recourse must be had to other methods. We can scoop out all we can reach with our hands, this implies a dilated or dilatable os, and it will be fortunate if we meet with this. If not, dilatation will

be necessary, either by the finger or by means of tents, or Barnes' bags. A very useful contrivance used in the removal of the fleshy mole is the Beecher forceps, termed by him a "New Abortion and Placenta Forceps." A description can be found in the *Medical News*, 1883, xlii, 259. The advantages are: It is adapted to the removal of the foetus in abortion, and the placenta, moles, etc., taking hold of a larger portion at a time without in the least imperilling the mother's parts. Besides what may be caught in the jaws, if any portion of the mass extend beyond and between the blades behind the shoulders, they are also held without being crushed through, as would be the case in the Bond instrument, with its closely approximate blades; and greater purchase is given upon the mass. The fenestrum allows a protrusion through it, and prevents the crushing through the placenta without the ability to remove a portion of the mass other than in shreds. It can also be used as a dilator.

In some cases the moles adhere to the uterine wall as firmly as a placenta glued by fibrinous deposits. In such cases a curette is necessary. If the diseased tissues be not removed entirely the portions remaining may give rise to grave and exhausting discharges or the recurrence as before mentioned.

It is also important to remember in this connection that twin pregnancies may occur in which vesicular degeneration affects the membranes of but one ovum. It is well, therefore, to bear in mind the possibility of this, and that the sound ovum may develop to full development.

Even after evacuating the uterus there may be a good deal of hæmorrhage. If so, repeat ergot, use abdominal pressure, and give iced drinks, etc. The slow convalescence may be hastened with iron, nux, quinine, quinine food, wines, etc., as the case may indicate.

517 Pine St., Philadelphia.

PEROXIDE OF HYDROGEN AS A REMEDIAL AGENT.

Read before the St. Louis Medical Society, February 4, 1888.

BY I. N. LOVE, M.D.,

CONSULTING PHYSICIAN TO THE CITY HOSPITAL, ST. LOUIS.

I am aware that there is a disposition upon the part of some workers in the profession to decry the merits of those whose efforts tend in the direction of therapeutic investigation, and the application of remedies to the relief of disease, the rather appreciating pathological research and the study of the phenomena of disease.

Fully recognizing the importance of closely and carefully scrutinizing the anatomical, physiological and pathological panorama that may be presented to our view, I cannot refrain from suggesting that after all the main object to be attained is the relief of suffering and the prolongation and saving of human life. The most profound pathologist would be powerless for good did he not have as an ally the deliver among drugs searching for the means of mastering the microbes which he has discovered, and the studious, thoughtful practical physician, accomplishes

the greatest amount of good and secures the most substantial success who promptly applies the knowledge gained by both workers, and all are co-laborers aiding the securement of that grand millenium when man will pass from the cradle to his second infancy without the shadow of suffering or a thought of disease.

Huxley has said that an exhaustive study of drugs on the part of physicians, was not necessary to their proper application to the cure of disease any more than a complete knowledge of the manufacture of surgical instruments was necessary to their successful use by the surgeon; however, a practical familiarity with the make-up and mode of action of these medical and surgical tools is essential to their graceful and efficient use.

The medicament to which I propose to direct your attention in this paper is the "Peroxide of Hydrogen," the formula of which is H_2O_2 , and which was discovered in 1818 by Thenard, by adding dilute acids to peroxide of barium. Meissner, in 1863, proved its presence in the rainwater collected during thunder storms, and this has been corroborated by Schönbein, Struve and others. The usual preparation of a solution of peroxide of hydrogen depends upon the decomposition of barium peroxide by hydrochloric acid (carbonic or hydrofluoric acid may be used) in the presence of ice cold water, and the precipitation of the newly formed barium chloride by means of sulphate of silver. Such solutions usually contain about 3 to 5 per cent. of the peroxide, and are concentrated by freezing, the last portions of water being evaporated *in vacuo* over sulphuric acid at a temperature not exceeding 68° F. In this form it is a colorless, transparent, syrupy liquid, with a specific gravity of 1.452, does not congeal at 22° below zero (F), volatilizing slowly and without decomposition at the ordinary temperature. It is decomposed when exposed to the sunlight, or when heated or brought into contact with charcoal, silver, gold, the platinum metals, the oxides of manganese, alkalies and other compounds. In this concentrated form the peroxide, if brought under the conditions favorable, may decompose with explosive violence, and in the presence of the oxides of the metals mentioned they are reduced to the metallic state.

Many other bodies act less energetically or are oxidized. Litmus and tumeric paper are gradually bleached, and the skin may be turned white by its application, accompanied by itching. In the strength to which I am now referring it is without odor and has a harsh and bitter taste, soluble in water in all proportions, which solutions are decomposed by the same agents as the pure compounds, but less violently. They are made more permanent by adding a small amount of mineral acid.

The commercial peroxide of hydrogen is a 3 per cent. aqueous solution, and is prepared on a large scale for the bleaching of animal products such as feathers, hair, silk, bone, etc. It is known as "ten volume peroxide of hydrogen," owing to the fact that it yields about ten volumes of active oxygen which may be estimated by adding a sufficient

amount of sulphuric acid, and afterwards a standardized solution of potassium permanganate as long as the latter is decolorized. From its very nature this agent should be a powerful antiseptic and a destroyer of microbes; anything which accomplishes oxidation as rapidly, if it can be applied safely, must be an excellent application to purulent surfaces for its cleansing effect. It has been administered internally for diabetes, but without success. Its recommendation for some forms of atonic dyspepsia, would seem to be reasonable, since we know that condition to be frequently due to a catarrh of the gastric mucus surface accompanied by excessive secretion and fermentation.

I find there is considerable variation in the effectiveness of solutions coming from different drug stores; this may be due to a failure to protect it from the sunlight. It should be kept in opaque bottles at a temperature not above 77°. I have secured uniform satisfaction from the solution manufactured by the G. Malinckrodt Chemical Co. of St. Louis.

The clinical application of a remedy is the best test of its value. As a contribution to the fund of knowledge upon this subject, I herewith present the following cases:

Scarlet Fever and Diphtheria.—R. H., aged 4 years, an unusually intelligent and interesting boy, developed scarlet fever Dec. 22, 1887. A pronounced case, temperature vibrating for several days from 102° to 104°, throat quite sore, some disposition to ulceration upon both tonsils. Within a week symptoms much modified, temperature ranging in the neighborhood of 100°, where it remained for four days, child being quite playful but not permitted to get out of bed. At this time diphtheria became a complication, involving the pharynx and the nasal passages. The secretions from all the mucus surfaces were very profuse and purulent in character, and suffocation at times seemed imminent from its accumulation, and the odor was extremely offensive to the patient as well as the attendants. A well organized fibrinous exudation appeared over the surface of the tonsils well forward to the palate, and upward to the posterior nares. The submaxillary and sublingual glands were much enlarged and engorged. Wherever a mucus surface was visible, if not covered with diphtheria membrane, it was violently inflamed nearly to the point of ulceration, and exuding a purulent and almost disgusting discharge. Temperature ranged in the neighborhood of 104° and 105°, and almost constant paroxysmal cough was present, due to the general irritation, and accumulated secretions, and at times a marked asthma was present, owing to reflex irritation, dependent upon the inflammation of the posterior nares. The general conditions were alarming, the child being almost in a state of frenzy, owing to his many discomforts. I shall not give in detail the notes of the case, as I only cite it as an illustration of the value of a particular remedy to relieve a particular series of symptoms.

Having been using the peroxide of hydrogen in various strengths for some months as a purifying and stimulating wash for purulent ulcers, sinuses, and

fistule, as well as diphtheria, I concluded to use it as an application in this case. Diluting it with one part to two of water for application to the nasal passages by means of a syringe, and using it in its purity by means of probang and absorbent cotton to the pharynx. I soon had the satisfaction of seeing the pus, and accumulated mucus cleaned out from all the surfaces as if by magic. The child was a bright little hero, and, though semi-delirious, he helped materially in its application, and also in the removal of the oxidized purulent matter. The nasal passages, front and back, were soon cleared out, the fauces as well were kept in a comparatively clean condition. A good opportunity was now presented for applying the solution in its purity to the membrane direct, and the disintegration of the same was accomplished after repeated application in a very decided manner. Wherever the solution came in contact with organic matter, a marked effervescence and bubbling ensued, and a breaking down of the accumulation or exudation and throwing off of the same occurred. The beneficial effect of the application was apparent, all the distressing symptoms were much abated, and within three or four days they had passed away. One thing quite noticeable was, the fact that the constant spasmodic cough subsided after the removal of the purulent secretions from the nasal passages.

The success in this case was similar to that in six other cases, and I quote this one as illustrating the class, not desiring to indulge in repetition by reporting them all. This child was in a most dangerous condition for many days and nights, and I do not claim that the peroxide of hydrogen saved him; but it certainly helped to do it, in that it enabled me to combat the local poison, acting as an antiseptic, a germicide of the most pronounced character, a remover of purulent septic matter and offensive odors, aiding in the conservation of comfort to patient and attendants.

Constitutional measures were, of course, never lost sight of, constant attention being directed to excretion, sedation, stimulation and nutrition. Other local measures were of course used, the peroxide serving as a means of "clearing the track" for the application of soothing and healing ointments to the nasal passages and the spraying of all the surfaces with Listerine and other remedies as indicated.

En passant at this point permitted me to remark that I have no patience with the practitioner who permits himself to be overcome by a physical, mental and scientific inertia, so that he can sit idly by and trust entirely to the *vis medicatrix nature*. If one's house is on fire and he trusts to nature instead of turning on the hose, the chances are that he will sleep on the commons unless a friend takes him in. The "therapeutic nihilist" should change his calling. The practitioner with no faith in physic, who, like Solomon, cries out "All is vanity," gives evidence that he has mistaken his vocation, or, like Solomon, indicates that it is time for him to abdicate. What would one think of a soldier who was ever decrying the merits of his cause and gun? Either that he has a poor cause and an inefficient gun, or does not understand the one nor know how to use the other. In the

management of no disease, in my judgment, is it so necessary for the attendant to be ever on the alert as in diphtheria. He should sleep on his arms, so to speak, with one eye open; anticipate his enemy rather than run the risk of a surprise. Well supplied with ammunition, ready to use it "not too much but just enough," and possess an abiding faith in its efficacy. In wrestling with disease let us pursue the course with remedial agents that we do with friends; study them, try them, weigh them in the balance thoroughly, and if not found wanting adopt them and trust them. Then let us stick to them as long as they prove faithful. If they fail us and a better one be presented, accept it if it stand the test and prove worthy. In short, let us not drop an old friend for a new unless the first prove false and the second give evidence of virtue. As an adjuvant in arresting the destructive tendency of diphtheria I am persuaded that the peroxide of hydrogen will stand the test of time.

Purulent Oeana and Chronic Nasal Catarrh.—I have applied the peroxide of hydrogen in strengths varying from 1 part to 3 or 6 of water in four cases of the above character during the past month. Very favorable reports have been given me, enough so to justify me in considering it of great value in this trouble. A sufficient time has not elapsed to enable me to determine whether it will secure a permanent cure. The application was made three times daily.

Acute Coryza.—The peroxide in the proportion of 1 to 4 of water was applied freely by means of a syringe through the nostrils, a hard rubber syringe gently throwing about 2 tablespoonsful into each nostril while the head is thrown backward. It passes back through the posterior nares, carrying the completely oxidized mucus secretion with it. It is then applied to the fauces in the same manner. A free sneezing and perfect discharge follows. The application is made about once in four hours in the beginning and less frequently later. Three such cases were greatly relieved after first application and cured inside of a day or two. It is well known that influenza, in some cases at least, is dependent upon some irritating germ, and possibly the agent used above killed the microbe.

Whooping-cough.—In two cases where the paroxysms were frequent and violent I have had great satisfaction in seeing the frequency and severity much modified by the use of the peroxide of hydrogen (1 to 4) twice daily, and the attack was unquestionably cut short.

Reflex Asthma.—Two cases of reflex asthma intercurrent during an attack of diphtheria and a general catarrhal fever, dependent upon the irritation in the post-nasal space, were promptly relieved after a few applications of the peroxide (1 to 4).

Follicular Tonsillitis.—Very satisfactory results were obtained by using the remedy as a gargle (1 to 3) every two or three hours. Listerine, callendulae, tincture of iron and other soothing, stimulating and astringent remedies were used by the atomizer between the intervals.

Hay Fever.—I have not used the remedy in this trouble, but would suggest from the manner of its action that it is worthy of trial.

Cancer of the Womb.—In this affection I have had great satisfaction in using the peroxide in its purity as a cleanser, deodorizer, and stimulator of healing in that portion of the ulceration probably dependent upon the irritating effect of accumulated purulent matter. The gratification and comfort to patient and attendants secured by the application well repaid its use. One who has never observed the horrible stench in the room of a neglected cancer of the womb can have no conception of the value of the drug in this connection. Dr. Joseph Grindon, a dermatologist of St. Louis, informs me that he has used the agent to remove pigment spots from the skin. This is the main remedy furnished by dealers to weak-minded women for blinding the hair.

It is needless for me to continue to cite cases and conditions where the peroxide of hydrogen will prove of value. I think it worthy of trial in gonorrhœa.

After a six months' trial of the peroxide of hydrogen, considering the nature of the agent and its effect upon purulent matter and bacteria, I feel justified in concluding:

1. The peroxide of hydrogen is a most efficient means of cleansing purulent surfaces, deep cavities and sinuses, and stimulating the healing process in ulcerating parts.

As a destroyer of microbes it is of great value as a local application in diphtheria and scarlet fever, *ozæna*, coryza, and whooping-cough.

3. For the above reasons it should prove of value in gonorrhœa, hay fever, and similar disturbances probably dependent upon specific germs.

FACTS IN RELATION TO EMACIATION.

Abstract of Paper read before the Medical Society of the District of Columbia.

BY THOMAS TAYLOR, M.D.,
OF WASHINGTON.

For several years past I have devoted much of my time to the crystallography of animal fats, and have examined, crystallized and photographed the fats of several hundred animals, and a few vegetable oils. In the prosecution of this inquiry I observed incidentally, that the fats of several monkeys, victims of consumption, when rendered, strained and cooled, at a temperature of about 70° F. according to my usual method of treating fats in order to crystallize them, exhibited but a trace of the solid fats; the mass consisted principally of olein. From this fact my attention was directed to the consideration of the fat of human beings, subjects of emaciating diseases, from whatever cause. I have tested the fats of three consumptives who were greatly emaciated. The fats were crystallized in the usual manner—boiled, strained and cooled, at 70° F.—and, when examined, were found to be nearly destitute of solid fats, olein largely predominating.

While the cases cited are insufficient data for determining what may be the invariable condition of the fats of emaciation, I deem the facts thus far observed, worthy of attention, and I propose to continue these

researches in order to ascertain whether the conditions I have stated are constant. If in the animal economy, it can be shown that there is a greater tendency to oxidize the solid fats than the oil, in cases of high temperatures and emaciation, valuable information will be gained.

With regard to the composition of fats in general, they consist of three distinct fats, viz: olein, palmitin and stearin. These are known as glycerides of the fatty acids oleic, palmitic, and stearic. Early chemists applied the term *margarin* to a substance they believed to be a simple fat, but modern chemistry has demonstrated that this substance is merely a combination of palmitin and stearin. It has been demonstrated that the fat of milk and butter contains but a trace of stearin, and that it is composed mostly of palmitin and olein, and it is also stated on high authority, that the fat of man is of similar composition.

In my investigations relating to the forms of animal fat, I have observed that the crystals of human fat have a marked resemblance to crystals of milk-butter, suggesting the importance of the use of milk-butter as the proper form of fat for man, and superior to fats which consist largely of stearin, such as some oleomargarines I have tested.

According to modern chemistry stearin requires a temperature of 144° F. to melt it, and in each succeeding fusion a still higher temperature is required. For this reason the common fats cannot be as well adapted for the sick as butter, which melts at blood-heat. Therefore I think it might be well to test the value of pure butter as a substitute for other forms of fat now in use in cases of emaciation. In this case I would suggest that butter used for this purpose be boiled and strained to remove its casein, the casein of milk frequently proving very indigestible and unbearable to a weak stomach.

Milk, the natural food of man, contains all the essential proximate principles necessary to build up a perfectly healthy human being; but the butter fat of milk contains but a small proportion of nitrogenous matter as compared with the milk from which it is made; therefore, butter of itself does not afford sufficient nitrogenous matter to sustain life but for a limited period. As it is desirable to make sure that the diet contains a proper amount of nitrogenous matter, in an acceptable form, I recommend the use of peptonized beef, in other words, digested beef, in connection with butter so treated. Such a combination would build up the vital tissues.

As the solid fats of butter contain a larger amount of carbon than is found in the same amount of oil, the oxidation of these solid fats would contribute more animal heat than would the oxidation of the oil. In this process water would be formed, the elimination of which would lower the temperature of the body, thus tending to arrest the destruction of the tissues.

The "*Revue Médico-Pharmaceutique*" is the title of a new journal recently begun in Constantinople, and edited by M. Apéry.

MEDICAL PROGRESS.

THE TREATMENT OF WOUNDS BY IODOFORM TAMPONS.—DR. F. BRAMANN reports (*Archiv für klinische Chirurgie*, Berlin, 1887) the results of treatment of wounds in von Bergmann's clinic for some years past. The gauze employed is sterilized by means of steam at 212° , and after drying may be impregnated with an antiseptic solution. The sterilized gauze is used in cases of trifling operations in small wounds. In larger wounds with more profuse secretion, it was thought best to obtain whatever advantage could be derived from the impregnation with corrosive sublimate, especially as the patients and operators are in the immediate vicinity of an audience coming direct from the anatomical rooms. The cotton employed is of late years merely sterilized. The towels, gum cloths, sponges, etc., are treated in a like manner. The silk used in sutures is wound on glass or metal spools, sterilized by steam, and inclosed in metal caskets. The catgut used for deep stitches (stitches of relaxation), and for ligatures, is kept ten to fourteen days in a solution of 4 parts bichloride, 800 of alcohol, 200 distilled water. This is frequently renewed. The catgut is then changed to an alcoholic sublimate solution of 1 to 800 alcohol and 200 parts of water, and is taken direct from this. The preparation of the patient consists in giving full baths, washing the region of operation with soap and water, shaving the part, rubbing the skin with ether, and disinfecting it with from 1:1000 to 1:200 solution of sublimate. The instruments are kept in a 3 per cent. solution of carbolic acid. During the operation the wound is often irrigated with 1:2000 bichloride solution. In operations in the abdomen, the pleural cavity, the mouth, rectum and bladder, salicylic acid 1:1000, or boric acid 1:200 is employed, and at the end of the operation a solution of iodoform in ether is generally used.

Next to strict antiseptics, the complete stoppage of bleeding is regarded as the chief agent in procuring union by first intention.

When the wound is dry, and the smallest bleeding vessels have been tied, the suture is applied with or without drainage, but only in those wounds which are considered absolutely antiseptic, and have not been infected through previous supuration or contact with unclean materials. Among the cases treated in this manner are included all extirpations of tumors, removals of breasts, amputations, osteotomies, etc.

In wounds where the bleeding cannot be entirely stopped the formation of a large clot is objectionable, not only on account of the pressure which it may make, as in fractures of the skull, but because of the risk of decomposition and blood poisoning. Although such clots may, through absorption and organization into connective tissue, aid in the process of repair, they sometimes remain fluid for long periods, and during that time are a source of danger. Therefore, when it is impossible to dry the wound absolutely, or where there is the least suspicion that it is not entirely aseptic, after thorough disinfection

with 1:1000 bichloride solution and with an ethereal solution of iodoform applied to the wound by means of a syringe, it is loosely packed with strips of iodoform gauze of several feet in length, and three to four inches broad. They are applied so that the larger part of each strip lies in the wound, and the ends come out at the angles. The sutures were formerly put in at this time, but this has been abandoned on account of the difficulty in keeping them disentangled, and of their adhesion to the iodoform gauze. The patient is now anæsthetized a second time for the application of the sutures. The tamponed wound is covered with sublimate gauze and cotton and an antiseptic bandage. If the secretions make their way through the dressings, the superficial layers are renewed, but the iodoform gauze is allowed to remain undisturbed for two days. If it is then removed by gentle traction on the ends hanging out of the wound, the latter is found clean, unirrigated, not reddened, absolutely dry, and it is only very exceptionally that a ligature is required. Careful suturing, with or without drainage, has resulted invariably in union by first intention, even in those cases in which, for any reason, as great weakness, or for the stoppage of bleeding from large vessels, the tampon has been left in from four to six days. His report of his results is extremely interesting, includes a large number of important cases, and appears to confirm his estimate of the value of this method.—*American Journal of the Medical Sciences*, January, 1888.

THE DIET OF NURSING MOTHERS.—The influence of the diet upon the function of lactation is a subject of such importance for the rising generation as to warrant frequent investigations by scientific authorities. It seems to be one of the evils inherent in a high degree (so-called) of civilization that women, in a large proportion, especially among the upper and middle classes, should suppress and ignore the physiological function of the secretion of milk, and abandon the privilege of nursing their children in a natural way. But this being the case, it is desirable that the best substitute be provided. The feeding-bottle is but a poor substitute for the mother's breast, and of late there is a tendency to give too diluted a milk. A wet-nurse is the best substitute for the mother herself, and a knowledge of the influence of the food upon the composition of milk ought to be widely circulated, at least in its chief features. DR. ZALESKI, Docent in the University of Dorpat, is the latest worker (*Berl. Klin. Wochenschr.*, Nos. 4, 5, 1888) in this subject. He has made careful analyses of the proximate constituents of milk, both in the lower animals and in women, under various conditions of diet, and his chief conclusions are: 1. Milk which contains an undue proportion of fat may have a very injurious effect upon the child. 2. A highly nitrogenous diet causes a great increase of fat in milk; the same kind of diet lowers the proportion of milk-sugar, but has very little influence over the other constituents. Alcohol exerts the same influence as a nitrogenous diet. 3. A proper composition of the milk may be attained, speaking generally, by the use

of a proper dietary. 4. The lower animals are subject to the same laws as human beings in the above respects. 5. A large proportion of milk is derived, directly or indirectly (that is, by changes in the blood itself or in glands), from albuminous sources. The above conclusions are directly opposed to the views of the laity on the subject. The wet-nurse, as a rule, is a highly privileged being, who must be allowed an unlimited quantity of butcher's meat and a good supply of stout. The amount of exercise usually taken is a gentle saunter at her own sweet will; active exertion is out of the question. Probably the diet has been previously very plain, and too often the sudden change influences the composition of the milk to the detriment of the child. Diarrhoea, of a more or less fatty character, is often the consequence, and Dr. Zaleski instances a case in point. Chemical analysis of a specimen of the milk of a wet-nurse revealed over 6 per cent. of fat, and inquiry was made as to the condition of the child. It appeared that the child was ailing ever since the services of the wet-nurse had been called into requisition. The latter was a poor girl, whose diet and whole course of life was changed when she became a wet-nurse, and that this injuriously affected the lacteal secretion was proved by the fact that her own child had been far from well since then. An immediate return to the previous mode of life was ordered for the nurse, with the best results.—*British Medical Journal*, February 11, 1888.

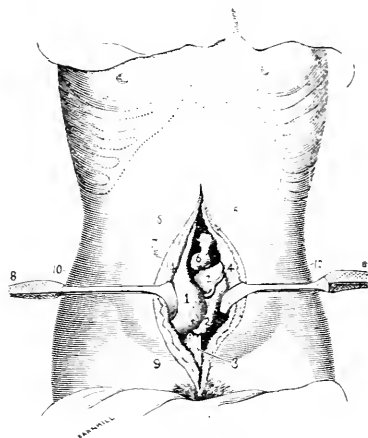
OLD RUPTURE OF GALL-BLADDER; ADHESIONS OF LIVER TO COLON AND PELVIS.—In *Progress*, January, 1888, DR. JOSEPH EASTMAN, of Indianapolis, reports the following case:

Mrs. W., Chelsea, Ind., sent by Drs. Philipps, of Chelsea, and Sipe, of Orange, with this letter of diagnosis: "1. Ovarian, (a) solid tumor of ovary rare. (b) Would probably be more movable. 2. Omental tumor; (a) solid tumors of omentum are almost invariably malignant. 3. Kidney; size, shape, mobility, correspond to a displaced kidney, which I think it is. It might be cancer of the kidney, but I do not think there is pain enough for that, so it is excluded. Finally, as the diagnosis is not clear, I would advise waiting till fall—watching its growth and other symptoms. Meanwhile, give general tonics and cheer her up. REAM."

Examination: Somewhat elongated abdominal tumor a little to right of median line of abdomen. Could be outlined fairly well by palpation. It was not kidney-shaped, nor scarcely movable. Tumor gave impression of much thickness. Kidney of right side definitely outlined in normal position through thin walls. Subjective: Fourteen years ago had "spells of bilious colic," since then has felt dragging pains in abdomen, causing her to assume a somewhat stooped position. Contraction and pain increasing till the condition seemed to demand surgical relief.

Operation October 18. My usual aseptic precautions. Incision exposed abdominal organs as shown in figure. A firm cicatricial band held the right lobe of the liver down in the right iliac fossa. This was severed, thus enabling me to raise the inner margin

of the liver and find the ascending colon, adherent to inner border and under surface of liver. On separating gut from liver I found, "plastered" between them, three gall stones the size of marbles. Felt more through wall of bladder and incised the cyst, removing fifty-one more gall stones. Gall bladder shrunken and dry. I here present them in box; they vary in size from a grain of wheat to tip of thumb. Closed incision into gall-bladder with silk. Lembert's sutures, to make the closure perfect, there being no gall in bladder. I did not put in a drainage tube, as the gall had escaped in some way for years through ducts, or else had not been poured into the cyst. Having broken up extensive adhesions on surface of liver and bowels, I put a glass drainage tube into the abdominal wound and closed the same around it. Nothing of note followed, except that the patient has made a good recovery and is at this date, December 15, seemingly cured. The liver can now be felt to the right and slightly above the umbilicus, its lower margin at least six inches higher than before the operation.



1—Right lobe of liver. 2—Bowel adherent to liver. 3—Cicatricial band dragging liver downward. 4—Peritoneum everted by retractors. 5—Thickness of abdominal parietes. 6—Bowel, also adherent to liver. 7—Umbilicus. 8—Retractors. 9—M. p. venens. 10—Sup. crest ilium.

Comment.—From what information we have, this was a case of formation of gall stones fourteen years ago, with enlargement and rupture of gall-bladder, causing local peritonitis, with resulting adhesions between liver and ascending colon. The alternate distension and relaxation of this bowel may have increased the extent of the adhesions downward and inward, until the inflammatory process firmly anchored the liver to the pelvis, by the formation of the dense band of tissue represented in the figure by 3.

In the *Transactions of the Indiana State Society*, 1879, Dr. Kemper, of Muncie, reports a case in some respects similar, except in the important particular

that Nature formed a biliary fistula, which cured the patient. In this same valuable contribution to the literature of the subject, Dr. Kemper collects a number of cases.

REMOVAL OF GALL-STONES.—In *Progress*, Jan., 1888, DR. EASTMAN also reported the following case: Mrs. H., æt. 59, living in Delaware county, Ind., near De Soto, consulted Dr. Bunch, the family physician, who not being positive of his diagnosis, called Dr. Kemper, of Muncie, who diagnosed a distended gall-bladder, and was positive it contained gall-stones. November 10, at patient's home, assisted by Drs. Kemper, Bunch, Wymans and Boyden, I opened the abdomen in the median line, making an incision some five inches in length, lifted the gall-bladder up into the wound and incised it.

A half-pint of inspissated gall and mucus passed out. Introducing my finger I could feel two gall stones the size of marbles; removing these I detected still another lodged in the duct, which was with some difficulty squeezed up into the bladder by pinching the duct below the stone. It was removed, the bladder stitched to peritoneal layer to abdominal wound, and the abdominal incision closed around a small rubber drainage tube, which was left in the gall-bladder for drainage. There was a free discharge of bloody mucons through this tube for five days or more. When this had become less the tube was removed. Patient recovered.

TREATMENT OF RETAINED PLACENTA.—DR. LANE describes the method pursued at the Rotunda Maternity, Dublin, as follows: When the placenta is adherent I believe the proper treatment is to pass the hand or fingers into the uterus and detach it, although I have been informed that some Continental obstetricians allow the placenta in such cases to remain for even a month after delivery (unless there is hæmorrhage or symptoms of septicæmia), especially in the cases where the patients have not come to their full time. I consider, however, that if the operator's hands be not perfectly aseptic, this is the most dangerous of all operations met with in midwifery practice, except the Cæsarean section. It has been recommended by some authorities to keep the fingers inside the membranes during the operation, but there are many cases met with where, owing to the friable nature of the placenta, necessitating the removal of small pieces at a time, this is impossible. Should there be any septic infection about the hand, and especially about the nails, the usual seat of such poison, I failed to see how such a patient can escape becoming infected; for it is analogous to vaccination, except that virulent poison is substituted for healthy lymph, and with unfortunately greater likelihood of its taking effect, owing probably to the prolonged contact. The uterus, except where it has already been douched out with the hope of getting the placenta away, as I have already mentioned, is always douched with antiseptic solution prior to introducing the hand. Although the left hand is recommended by many as being smaller and corresponding more with the pelvic curve, the right hand is the

one generally used, for, the patient being in the obstetrical position usual in this country, the fundus of the uterus can be better and more easily supported by the left hand (the operator standing at the patient's back). Nor can an assistant, no matter how experienced he may be, support the uterus so satisfactorily as the operator himself, who knows the exact part of the uterus requiring pressure as to bring that particular part of the uterine wall nearer to the introduced hand, and who is able to remove it to some other part the moment required.

An anæsthetic, usually chloroform, in order that, if necessary, the hand may be passed in a second time where doubt exists whether all the placental tissue has been detached; for if the patient be perfectly conscious of what is being done, the operator must be very resolute to be able to withstand her solicitation not to pass the hand a second time, and I consider that, once the hand is introduced, the operation should be persevered in to entire completion. When satisfied on this point, the uterus should be again douched out with antiseptic solution.—*Practitioner*, December, 1887.

PICRONITRATE OF AMMONIA IN MALARIAL FEVER.—In the Bulgarian *Meditzinsko Spisanie*, Nos. 31 and 33, 1887, DR. A. GOLOVINA, lady physician to the Varna Town Hospital, writes that, at the suggestion of Professor Fr. Goll, of Zurich, she tried picronitrate of ammonia, in 3-centigram pills, four times a day, in seven cases of malarial fever of quotidian type. In five the paroxysm ceased to recur (in one case from the second day of the picronitrate treatment, in three cases from the third day, and in one from the sixth). Three of the successful cases were of recent origin, and two fairly old. The quinine treatment had been previously tried in three of them (including the inveterate ones) without result. In a sixth patient, however—a lad with quotidian fever of two and a half months' standing—a seven days' course of the picronitrate utterly failed to arrest the paroxysms, the latter subsequently disappearing in two days under quinine (50 centigrams twice daily). The picronitrate apparently gave negative results also in Dr. Golovina's seventh case. No unpleasant secondary effects were ever observed.—*British Medical Journal*, February 11, 1888.

DRAINAGE AND PRIMARY UNION.—CHENIEUX, of Limoges, in an article on this subject, draws the following conclusions:

1. Drainage is prejudicial to primary union of wounds.
2. Wounds whose edges are perfectly apposed and made aseptic should heal by primary union.
3. In operations such as ovariectomy and hysterectomy, in which ligatures must be concealed and in which there are large bleeding surfaces, drainage seems to be rather hurtful than useful.
4. Exuded fluids seem to constitute reserve fluids, and to be reabsorbed into the system, in case of drainage they are lost, and become poisoned by microbes.—*Revue de Chirurgie*, November, 1886.—*Annals of Surgery*, Jan. 1, 1888.

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PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SANITARY ARRANGEMENTS OF LARGE
COMMUNITIES.

The Inaugural Address of the President of the Liverpool Medical Institution at the opening of the session of 1887-88, delivered by Dr. J. BIRKBECK NEVINS, and published in the *Liverpool Medico-Chirurgical Journal* for January, 1888, is one of exceptional interest. It is an exhaustive review of the sanitary conditions of the Hebrew camp in the desert, and of the cities of Manchester, Edinburgh and Liverpool. The Mosaic regulations for the health of the camp in the desert after the Hebrews left Egypt are, or should be, familiar to all; and the only reference that we will make to Dr. Nevins' discussion of them will be to quote the following: "All dead bodies also were to be buried entirely outside the camp, a sanitary regulation in advance of our own by thousands of years, for we have not even yet entirely ceased to bury our dead in the midst of our population, and thus to pollute both our air and water. We have not even attained to the wisdom which buried the dead in porous cloths, which favored the rapid oxygenation and thereby the removal of the body."

In regard to the sanitary regulations of Manchester there are several striking features: The city is situated on a level plain, that is skirted within 20 or 30 miles by a circle of hills. The rivers flowing by the city are rendered so impure by manufactories that the water is unfit for personal use; and the city is at such a distance from the sea that the removal of its liquid refuse is a difficult problem, as was that of removing the solid refuse from the streets and dwellings. The city contains 66,000 privies and 11,000

water-closets. Each house has a back yard, at the far end of which is an ash-pit and a privy, with a back door communicating with the roadway between the backs of houses on adjacent streets. The night-men of the city sanitary force have access to the ashpits and privies through the back door. The authorities provide two pans for each house—one for ashes, vegetable waste, and other solid matters; and the other a carefully made waterproof iron pan, that is put under the seat of the privy, and removed once a week or oftener. The water-closets empty into the sewers, and liquid slops from the houses without closets are poured into the sinks or into the gutters; but all solid excreta are received by the pan. As often as necessary a covered wagon, long and air-tight at the top, and with sides that fall down by hinges, is sent to collect these pans. Sawdust and carbolic acid are placed upon the bottom of the wagon, and the pan is taken from the privy seat through the door at the back, and then covered by an hermetically tight lid; this lid is so tight, and the wagons so fairly air-tight, that only a slight odor, chiefly of carbolic acid, is perceived as they go through the streets. The wagons are driven into the top story of what may be called a purifying house, and the contents of the pans are emptied into a hopper, and are finally converted into a dry powder, which is readily sold for \$15 a ton as manure. The city guarantees that this shall contain a specified quantity of organic nitrogen and phosphates, to insure which the bones from slaughter-houses and other places are used and mixed with the powder.

Here, then, is a great city converting its solid excreta into a saleable manure, by a process carried on with such care and skill that the odor in the works is not oppressive nor injurious to health, and can scarcely be detected outside the works. The street sweepings are disposed of by being used to absorb liquid manure and sewage, so as to make a portable article.

In Manchester, also, the ashes and other dry and innocuous rubbish are made into a saleable article, after being burned, the residue being a mass of clinkers; these contain so much mineral and siliceous material that they are valuable as a material for making mortar for building purposes, and also for making brick. Diseased meat, dead animals, and spoilt or condemned fish are also utilized by being made into oil (used for lubricating machinery and for making soap), while the residue is turned into manure. Manchester has not yet solved the sewage problem, but is making preparations for conveying it to a place five miles distant, where it will be purified by pre-

cipitation with lime, and the sewage water will then be discharged into the Irwell.

From a sanitary point of view Edinburgh is exceptionally interesting, partly because the city consists of three portions of about equal size, that differ so much as to require different sanitary measures, and partly because a very important experiment in sanitation has been carried on in it for more than a century. The central and most elevated portion consists almost entirely of old houses, so constructed that sanitary improvements in them are practically out of the question. In this portion 8,804 houses have water-closets, and 8,664 have none. Nearly all the houses have a sink for the liquid excreta and waste, but the pail system is in full operation, the pails and ash-pans, and other receptacles for dry rubbish being removed by night-men. The night-carts are open, but made as watertight as possible. So many ashes and dry street sweepings are collected on the rounds that the pails are emptied directly into the wagons, and a practically dry load is taken to the stations for removal into the country. In the lower parts of the city the scavengers' carts remove the dirt or refuse in the roadway, the walks are washed and some slaked lime is sprinkled on them. This is taken up by the next cart. In the new parts of the city the water-closets are almost universal. But in the final disposal of its solid refuse Edinburgh has more trouble than Manchester, since its value when offered for sale by the city is only a few cents a ton. The sewage of the city, however, is abundantly utilized for direct fertilization.

In Edinburgh there is compulsory notification of infectious diseases, which is liberally paid for, and compulsory removal of the cases to hospital if the medical attendant desires the cases to be so removed. The system works well, the compulsory removals being especially welcomed by the hotel and lodging-house keepers, because the medical officer has the room disinfected immediately, and then gives a clean bill of health. The effect of this system has been seen on both the general and the zymotic mortality: for a period of six years, commencing with 1869, the average general death-rate per 1,000 was 25.85, average zymotic mortality 17.98; for a period of six years, commencing with 1879, the average general death-rate was 19.04 per 1,000, a reduction of 25 per cent. per 1,000 average zymotic mortality 11.9, a reduction of 33.33 per cent. per 1000.

The special sanitary features of Liverpool are

that it borders upon the sea, that water-closets are almost universal, and privies scarcely to be found, and that all the sewage of the city is carried out to sea. Other features are good water-supply, prompt removal of unsanitary property, improvement of ventilation by opening up courts, increased hospital provision, the scavenging of the streets, and the public urinals. From 1850 to 1885 the death-rate fell from 36 to 23.7 per 1,000, which is a saving of about 7,000 deaths annually. Practically none of the solid refuse of the city is utilized in the manner adopted in Manchester. The city has two dumping steamers that carry the refuse out to sea about two hours before high water. Combustible materials, such as mattresses, etc., are burned, and the ashes sold. Street sweepings are sent into the country and sold as manure. Until fifteen years ago the dry refuse of the city was used for filling in and making ground. This was objected to by citizens, and the corporation ceased to employ the cinder-waste, etc., for this purpose, though a thorough investigation made by Drs. Parkes and Burdon Sanders showed that after two or three years such ground might be safely used for building purposes, without any fears of sanitary evil results. Their report has been confirmed by the reports of the Medical Officer of Health of the city, and by those of the Health Officer of Manchester.

The "trough closet" system is also a feature of the sanitary arrangement of Liverpool, every court, in proportion to the number of its houses, being supplied with one or more. They are long deep troughs made of slate or some such non-absorbent material, and are placed under the seat of every closet. The troughs are filled about a foot deep with water from a tap out of control of the occupants of the court, but which is accessible to the night-man, who can dump the whole contents into the sewer, and then thoroughly cleanse the trough.

The 249 miles of sewers of Liverpool are ventilated by grates, 4338 in number, placed in the streets at intervals of about 80 yards, the clear apertures of the grates being never less than 63 sq. inches. These grates create no nuisance whatever. In addition to the street-drain gratings the court-drains are ventilated by ventilating shafts 6 inches in diameter. Every court is drained, and when there is no thoroughfare through the court the drain is closed at the top of the court.

In cases of infectious disease in Liverpool the bedding and such articles as cannot be disinfected by washing are removed, exposed to a high temperature (212°-220°), and returned in a vehicle that is

never used for conveying anything *previous to disinfection*. Infected rooms are disinfected by the burning of sulphur.

Almost in the centre of Liverpool is a large abattoir. Dr. Nevins states, from personal inspection that no nuisance arises from the city abattoirs. The manure and offal are mixed with dry ashes and sent into the country. The blood-clot is dried with the smallest possible delay, and before any trace of decomposition has set in. The small intestines of the animals are converted on the grounds into what is usually called catgut, and by a process that is comparatively free from smell or filth.

Dividing the ten years 1874-1883 into two periods of five years, we find that the deaths from fevers fell from an average of 23 in the first five to 10.8 in the second five years, and the deaths from diarrhoea from 32 to 21.4; showing a marked decline in the diseases most likely to be produced by nuisances.

UNETHICAL USE OF PHYSICIANS' NAMES.

In the Department of Correspondence we publish this week a letter from Dr. Charles W. Kollock, of Charleston, S. C., in which he makes a complaint that is perfectly just. With his letter he sent a column advertisement from the *Charleston News and Courier*, showing how the names of reputable physicians can get into strange places and very bad company. In this particular case these names are sandwiched between those of several prominent politicians and not a few so-called "pulpit orators." There are in all 21 names of Chicago physicians, representing the various colleges and both the regular and irregular schools.

With the clergymen and politicians that are afflicted with the apparently incurable itch of seeing their names in print, we have nothing to do except to say that if they are anxious to make a display of their ignorance they should do so in some way that will not tend to injure other and still more ignorant people that look up to them. Even an Ex-President of the United States—and there is only one—stopped raising pullets long enough to give "Dr. Morris Bernhardt" and "Dr. Louis A. Mathez" a recommendation in the following ungrammatical language: "He is entitled to confidence. As an optician I recommend him." The names of governors are "thick as leaves in Vallambrosa."

The profession in Illinois have been trying for years to get rid of quacks and irregular practitioners. But is it just that Chicago physicians should give them recommendations so that they may go off and

prey upon the people and the physicians of the States that have no laws regulating practice. Dr. Kollock is a young man, but recently embarked in his practice and specialty; and it is in the highest degree unjust to him—and to every other practitioner—that medical men are so careless in giving their names to every pretender that comes into their offices with an autograph album. The very fact that a man comes into a physician's office and asks for his name is circumstantial evidence that he is going to use that name improperly. To an honest man the name of another man is, as a rule, not worth carrying around. For sufficient reasons we think it best not to publish the list of names sent us: but the time may come, if such things continue, when such a publication would be but an act of justice to the profession at large.

LEA BROTHERS & Co., of Philadelphia announce the early publication of a very important Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis and Treatment, by Professor Robert W. Taylor, M.D., of New York. The work is to be issued in eight parts, aggregating 58 large folio chromolithographic plates, and containing about 200 figures. It is to be published by subscription.

THOMAS B. LESTER, M.D., died at his home, Kansas City, Mo., Feb. 24, 1888. He was one of the oldest and most prominent members of the profession in that part of the State. He became a member of the American Medical Association in 1872, and once served as one of the Vice-Presidents.

SOCIETY PROCEEDINGS.

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, January 21, 1888.

THE PRESIDENT, Y. H. BOND, M.D., IN THE CHAIR.

DR. MEISENEACH presented a specimen of

ATRESIA ANI.

The male child from which this specimen was taken was three days old before it was noticed that there was an imperforate anus and that the child did not pass the contents of the bowel, that careful examination of the genitals of the child which should always be made having been omitted. When I first saw the child it was three days old. I found that the extremities were livid, the skin was jaundiced, and the child was vomiting a yellowish-white fluid; there was no meconium, I think, but simply the contents of the

stomach. Upon a careful examination I found that the abdomen was very much swollen, slightly tympanitic. I found the perineum was very rigid. There was no sign whatever of a rectal bulb, and I came to the conclusion that the bulb or rectal pouch must be very high up, otherwise there must have been some indication to the sense of touch of its existence. I found in the raphé, at the site where the anus should have been, a slight protuberance, which is very nicely shown in the specimen here. I told the mother that, on account of the length of time that had elapsed, the condition of the child and the symptoms, in my opinion, if the operation were performed, the child would probably die, and that I would not operate without the father's consent. The father opposed the operation upon the grounds I have stated, that the child was then almost in the throes of death. I have here the rectal bulb, a section of the perineum, the bladder and one-half of the pelvis of the child. The rectal bulb terminates fully one inch above the perineum. I left the meconium in, to show the relations of the parts more clearly.

I found that the view which I had entertained that the rectal bulb must necessarily terminate very far above the perineum was correct. The intervening tissue does not show any development of the rectum at all; it shows simply a fibrous and connective tissue development. There are various stages or forms in which this malformation may occur. It may be very high or it may be a mere septum barring the opening. It may be very readily severed, or there may be various degrees of the distance from the perineum to the bulb of the rectum. Part of the colon may be absent as far as the ileo-cæcal valve, and there may be merely a cord representing the colon.

The practical point that I wish to demonstrate is in regard to an operation. The first and most natural way of correcting the malformation is to cut down through the perineum and attempt to reestablish the *prima via*, and in some cases this is possible, and in those cases where the termination of the rectal bulb is superficial that is the operation to perform. If you remember the anatomy of the infant pelvis, you will recall that the area of the perineum is very limited; we will find by measurement in the newborn that the distance from one tuberosity of the ischium to the other is not over 1 inch, and also that the antero-posterior diameter of the perineum from the arch of the pubes to the tip of the coccyx is also not more than 1 or 1½ inch. With an area of 1 inch by 1 inch, the operation is a difficult procedure, and especially so in a case like this; the bowel being practically almost out of reach, so much so that it may be impossible to establish a rectum through the perineum. The other two operations then would be by opening the rectum in the inguinal region or in the lumbar region. If it is not possible to establish the *prima via* through the perineum, resort is had to one of the other operations. It has also been attempted, after performing the operation in the inguinal region or in the lumbar region, after the patency of the canal has been established, to again open the tract through the perineum, but this has proven to be a very dangerous procedure. Cases in which it has been attempted

have proved fatal. The practical question is, whether the patient would not be better dead than to have the rectum either in the lumbar or inguinal region? Of course, if this child had been seen at an early day, within a few hours after birth, either one or the other of the two latter operations might have been successfully accomplished as far as the life of the patient or the operation was concerned, but the question is whether it would have been a practical operation as far as the patient was concerned, when you take the conveniences of life into consideration. I think this is an open question. I believe a patient is better dead than to have an anus in the lumbar region or in the groin, whether that patient be young or old. Of course this is probably not the right view to take from the standpoint of the surgeon, but I think that is the proper view to entertain from a moral standpoint.

DR. EDW. BORCK: If you had seen this child in the beginning, what kind of an operation would you have performed in this case?

DR. MEISENBACH: I should probably have attempted to find the gut through the perineum. If satisfied that I could not accomplish this I would have reached it through either the inguinal or lumbar region. Of course that point would not have been decided before the operation.

DR. EDW. BORCK: The pathological specimen is interesting and instructive, especially to the surgeon who takes an interest in congenital malformations. If there is simply a thin septum of perineum over the rectum, it is a very simple matter; but if the bulb of the rectum is high up and you cannot pull it down, the operation is much more difficult. I have had several such cases. In one case I made an incision until I reached the rectum, and then operated no further for three days, simply keeping the wound open with sponges. On the third day after I found that the meconium had come down and distended the part so that there was no trouble to make an opening and stitch the end of the gut to the skin, thus making an opening. In that case the child recovered without any bad symptoms.

DR. DEAN: There is one point that should be examined still more closely: to see if there is any connection, however fine, with the urethra or neck of the bladder. It is very seldom that atresia ani occurs without there being an exit somewhere, either into the vagina, bladder, or into the urethra or ureters even. As the ureters do not develop from the kidneys downward to the bladder, but from the bladder upward toward the kidney, so that where there is but one kidney, there may be two ureters; one to one kidney, the other extending from the bladder a considerable distance toward where the other kidney should be; so the anus is formed by an invagination, involution or growing in of the epiblast upward, meeting the lower end of the bowel above. The tendency of the mesoblast is to unite in advance of the epiblast. If the splanchnopleure closes before the somatopleure, the opening may remain in the cloaca or in the sinus urogenitalis.

DR. MEISENBACH: I distended the bowel pretty thoroughly, and as far as ordinary evidences go, there is no opening communicating from the rectum to the

urethra or otherwise. If any had existed I must have been able to express from it some of the meconium and fluid. I found no evidences of exudation. There was one slight incision which I made when dissecting out the parts. I sewed that up carefully and then put pressure upon the contents of the bulb and tied it down, and found no evidences of any escape of the fluids. The meconium that escaped at first through the incision was mucus tinged with green.

DR. DEAN: I would suggest that a very fine grooved director be used to open the urethra into the lower part of the bladder, so as to see from before backward, and see whether any point of opening into the bladder exists.

DR. T. F. PREWITT presented an

UNUSUAL TUMOR OF THE UTERUS.

A few weeks ago a patient, a maiden lady, 47 years of age, came to me with a tumor supposed to be ovarian. It extended up above the umbilicus, fluctuated, was evidently a cyst. She had recognized its presence five years ago herself, but says that there had been something wrong about the uterus or pelvic organs for sixteen or seventeen years, at least so some physician supposed, and had advised an examination, which she objected to and no examination was made. She had menstruated from the time that she was 12 or 15 years of age; she menstruated until last summer, when, upon the receipt of some sudden distressing news, menstruation ceased for two months, and then returned and continued until five months ago, when it again ceased. There has been no indication of menstruation since that time. On examination I could detect this rounded tumor that, as I have stated, fluctuated. It was evidently a cyst. On making a vaginal examination, which was a little troublesome because the hymen was intact, I could detect the body of the uterus seemingly, and it gave to me the impression of a rather retroverted uterus from pressure of the tumor upon it. I could pass my finger back of the cul-de-sac of Douglass and feel the body of the uterus seemingly; passing forward around the cervix, my finger passed up to what seemed to be a sort of projection, a growth which apparently presented a sort of sulcus between the growth and the body of the uterus, as though the tumor was so closely connected with the body of the uterus that they could not be separated, that there was no space between them which could be recognized; still it had the feel to me as though there was a sort of sulcus between. Evidently the uterus was closely invested by the tumor; there was no fluctuation below; it was solid and hard. The uterus did not appear to me to be very much enlarged. I was much puzzled to determine the character of the tumor. That it was a cyst I was satisfied, but told her there was something unusual about it; that it was not an ordinary ovarian tumor. However, she was anxious to have it removed, and I saw no reason why it should not be attempted. I did not introduce a sound into the uterus, and afterwards felt that I had reason to congratulate myself that I did not. I suggested to her an exploratory laparotomy, and that if I found out I could not remove it there would probably be no great injury.

She objected to this and said she wanted it out, and that she would rather die than let it remain.

Three weeks ago I opened the abdomen, and found a smooth round cyst which fluctuated, and which had some solid matter about the walls. I introduced a Wells' trocar, which let out a dark bloody-like fluid that soon plugged the tube so that it would not flow. I had to enlarge the opening in the abdominal cavity in order to get the tumor out. I examined the pedicle, and to my astonishment I found it continuous with the uterus. It was evidently a cyst filled with blood. At the upper part of what would naturally have been the uterus near the fundus the Fallopian tubes passed out. I passed my fingers along and picked up the ovaries; they were all right, and rising above from the fundus of the uterus was this tumor continuous with the uterus. The uterus itself did not seem to be very much enlarged, still there was this continuous growth above. I could see nothing to do but to remove it, and I did so, strangulating it to a certain extent with an elastic tube—a rubber tube first, and then ligating it, using Tait's ligature. There was little bleeding from one of the vessels. I found an opening in the lower portion of the cyst—I had opened the cyst by cutting it across—I could readily have passed a probe. I did not pass a probe and am now sorry that I did not. I closed it by the extra-peritoneal method. The patient has done pretty well although there has been some suppuration in the track of the wound, and seemingly a slight intra-mural hemorrhage. On removing the dressing on the eighth day considerable bloody fluid escaped from the walls. The lower portion of this tumor is undoubtedly uterine. It was plain to me that it was uterine tissue; yet it was entirely above the Fallopian tubes, which are intact. The ovaries are also intact.

Here then, was a cyst that under ordinary circumstances we would suppose to be an hæmatometra, yet unique in its character. The woman had menstruated regularly for twenty-five years. She complained of some pain in the back, it is true, on the day before and the first day of her menstruation, but many women complain of pain during menstruation. She menstruated usually about three days, and has never had any irregularities in that direction. She menstruated until five months ago, yet she certainly had a tumor five years before. Hæmatometra are usually the result of an obstruction of the vagina or of the cervical canal by some means, either the result of inflammatory action or the encroachment of a tumor on it. This was not the case in this patient. She had menstruated regularly without any trouble whatever. Where then did the blood come from? And if it was an hæmatometra, how did it happen that the whole cyst was above the Fallopian tubes? Here was an opening that seemed to extend down into the cavity of the uterus, but the whole expansion of the tumor almost was above the Fallopian tubes. There is a thick wall I cut through to get rid of the tumor. The lower portion at least was uterine tissue; above it had so changed that it no longer resembled uterine tissue; it was not only a thin wall above, but there was nothing like uterine tissue

about it. I don't know whether the probe would have gone into it from the cervix or not, but I felt that I was fortunate in not having made the attempt, for if I had passed a sound into the uterus and could have entered the cavity I would almost certainly have set up a disturbance that would have resulted in destructive changes, a septic condition, and my patient would have been infinitely worse. When we have hæmatometra under ordinary circumstances we can certainly expect the body of the uterus to be distended; that certainly was not the case here; the body of the uterus is still within the abdomen, and the Fallopian tubes and ovaries are still intact. The whole expansion has taken place in the upper segment of the uterus above these appendages, and has taken place while the woman was menstruating regularly. This is something very unique in the history of hæmatometra. This woman was 47 years of age. Hæmatometra much more frequently occurs in young girls, although it has occurred in older women, women 45 and even 60 years of age, but it is very rare in women of that age.

In answer to several questions Dr. Prewitt said that so far as he knew the uterine cavity was left intact. What was removed was simply expanded uterine tissue; where it was cut through it was clearly uterine tissue, but there were no indications of uterine tissue in the upper portion. There was no septum between the cavity of the uterus and that of the cyst. The opening was plainly visible, and seemed to pass down into the cavity of the uterus. He did not close the opening. The pedicle was treated by the extraperitoneal method. There was not much hæmorrhage. He did not know whether the canal leading from the cavity of the uterus up was perfectly developed and supplied with a lining membrane. He did not pass a sound, either per vaginam or from above into the pedicle, but the opening passed down in the direction of the uterine cavity. Why the fluid did not go into the uterus was the question. In answer to a question by Dr. Lutz, as to what was made to constitute the pedicle? Was it a portion of the uterine body that was continuous with the upper portion of the cyst wall?

DR. PREWITT replied: It seemed as if dilatation had taken place in the upper segment of the uterus, and could not expand any larger without involving the lower portion of the uterus. The uterus was larger than normal. The lower portion of the tumor was simply uterine wall, the upper portion was thin cyst wall. There was no distinct pedicle; it was simply a continuation of the uterine tissue. I cut it off straight across and closed it up. The only explanation that presents itself to my mind is that it was a bipartite uterus, and one-half only of the cavity had become distended with menstrual blood; the other had gone on menstruating, and through some difficulty or other, a distension has taken place in one side only; one side has become distended, and a unilateral hæmatometra has occurred. We do have uterine fibroids sometimes breaking down in the central portion, forming a cyst. I don't think this was a tumor of that character.

DR. LUTZ: One of the most unfortunate circum-

stances in connection with this very interesting case is, as the doctor has well stated, his failure to introduce through the opening a probe into the uterine cavity, and we can judge only, therefore, from the appearance of the tumor as to its nature. It is a well-known fact that the ordinary division of uterine fibroids into the sub-mucous, the intra-mural and sub-peritoneal indicates their most usual localities. From the appearance of this tumor, from the fact that a portion of the tumor removed is apparently—and I say apparently, because no microscopic section of it has been made—a continuation of the uterine wall, and that the contents of the tumor are coagulated blood; and that the thinner portion is nourished by a large blood-vessel. On the inner aspect, perhaps to the right of where the incision was made to show the contents of the tumor is what I think is a blood-vessel. It has all the characteristics of a blood-vessel, and is about the size of the radial artery. It occurs to me that this tumor was a intra-mural fibroid at first, and as it gradually grew, growing in the direction of least resistance, it became a subperitoneal tumor and fibroid, and from what we know of the natural history of fibromata of the uterus, they are liable to undergo almost any kind of degeneration, so that we have in many instances a combination of the fibroid with cystic degeneration of perhaps only a portion of the so-called fibro-cystic tumor of the uterus. The argument for assuming this to have been a tumor of the uterus, and not a double uterus, is, in the first place, its peculiar position. It is one of the rarest things to have a double uterus with one portion situated higher up than the other. The ordinary configuration is that they are situated by the side. As I understood the description, the broad ligaments, the Fallopian tubes, the ovarian tissue, in fact all those tissues in which ordinary cystic tumors, or in which neoplasma develop, were perfectly normal. Here we have a tumor covered by peritoneum, occurring above the uterine body, with no adhesions, no kind of connection with any of the adjacent tissues. In addition, we have a tumor in a woman at the age when we ordinarily expect to find fibromata; and more than that, at an age when we expect to find the changes which fibrous tumors undergo to take place. Now the same struggle is going on so far as hysterectomy is concerned; the question of whether or not to insert a stump of the uterus into the abdominal wall, or else treat it intra-peritoneally as especially developed by Dr. Martin, of Berlin. I would like to hear Dr. Prewitt's reasons for treating the pedicle in this case extra-peritoneally—whether he believes it was the safer method, or whether there was anything in the anatomical construction of the tissues involved or of the uterus to cause him to prefer the extra-peritoneal method. Every case of hysterectomy that comes up ought to be viewed with that point in view, and an endeavor should be made to determine which of the methods is preferable. I believe, as I stated at the outset, that the intra-peritoneal method will supersede the extra-peritoneal, just as the intra-peritoneal method of treating the pedicle of ovarian tumors has superseded the implantation of the pedicle into the wall of the abdomen. About the time of

the menopause fibrous tumors are liable to undergo a degenerative process. I perfectly agree with those who say that it is impossible to determine the nature of this case from the microscopic appearance. To all appearances it seems to me that the tumor is continuous with the uterine wall. I believe, then, that the tumor is a uterine fibroid which has undergone cystic degeneration. Whether or not the extra- or the intra peritoneal treatment of the pedicle is preferable is a question which is as yet *sub judice*. The tendency in abdominal surgery is toward the performance of the ideal operation; to endeavor to treat the pedicles of extracted tumors intra-peritoneally, the success of ovariectomy in that respect, and the gradual transition from one method to another will perhaps be followed in the treatment of hysterectomy stumps. You will remember that Spencer Wells has had more to do with diverting the treatment of ovarian tumors than any other operator. His first method, and in fact that of the most operators was to treat the pedicle of ovarian tumors extra-peritoneally.

THE PRESIDENT said that Dr. Bond had expressed his idea as to the character of the tumor. He thought it was an intra-mural fibroid with a tendency to become sub-mucous.

DR. WALTER COLES: I agree with Dr. Lutz in all that he has said in regard to this tumor, but there is one other point which suggested itself to me from the imperfect examination which I made, and that is with regard to the character of the contents of the tumor. If this were a double uterus, if the upper cavity were a portion of the uterine cavity, that would of course have the ordinary mucous lining of the uterus, and the accumulation of fluid in the tumor would be mixed with epithelium and partake of the character of menstrual blood. I understood that the tumor contained menstrual blood, but an examination of the specimen does not agree with this; in other words it shows that there is a great deal of coagulated blood that has undergone partial disorganization; that it is in layers; that it is organized in layers; that it is adherent to the wall of the cyst. Now if this were a double uterus, I don't think anything of that kind would be likely to occur; the blood would remain perfectly fluid, or in rather a treacly consistency, something like molasses, at least it would be mixed up with more or less epithelial cells, which would render the diagnosis certain if any of the contents of the tumor were examined. Then the presence of this blood-vessel—and not only one, but there are a number of smaller ones also coming up from the wall of this tumor, making their way into its disintegrating tissue, whether it be coagulated blood or a portion of the tumor. In these fibroids it seems to extend as the tumor grows; the wall seems to grow thinner, disintegration takes place in the interior of the tumor going on toward the surface, and as we approach the surface the wall becomes more and more highly organized until at last we meet with blood-vessels. It seems in this specimen as if these blood-vessels are making their way toward the interior of this tumor. How soft it was at the time it was removed, before it was subjected to the action of the alcohol of course I am unable to say. The whole appearance of the

contents of the tumor would lead one to believe it was some other growth than simply the result of the coagulation of menstrual blood in a double uterus or in one side of a double uterus. Then, as Dr. Lutz has already stated, the situation of the tumor is very peculiar if it were a double uterus.

[Subsequent microscopical examination of the tumor showed that it was a degenerating fibroid.]

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, November 16, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D.,
IN THE CHAIR.

DR. P. J. MURPHY reported a case of
PUERPERAL TETANUS.

Mrs. Annie B., white, æt. 24 years, nativity Germany, was admitted to Columbia Hospital on the evening of August 9, 1886.

Her husband stated that she was delivered instrumentally of her first child three weeks ago by Drs. Sellhausen and Sowers. She did well for the first nine days. On the ninth and tenth days she sat up and on the latter day began biting her tongue, and "spasms" soon followed. The spasms had been occurring frequently since, and accompanied by high temperature and profuse perspiration. The day before admission she "broke out" all over her body. Is said to have had "lock-jaw," but can swallow now.

When admitted her temperature was 103.6°, and her pulse 140. The eruption was thought to be due to excessive heat. Bowels very constipated. Gave calomel grs. v, triturated with sugar. Patient was restless and delirious all night, having frequent spasmodic attacks with episthotonos. Temperature 104° and pulse 140 all night. Toward morning, under the influence of hypodermic injections of morphia, she slept some, but would awake suddenly with violent muscular contractions.

August 10, 5 A.M.—Temp. 104.2; pulse 125. She continued about the same all day. Enemata were given several times, but were immediately ejected. Skin bathed in profuse perspiration all day, notwithstanding frequent spongings. Had frequent attacks of episthotonos, and was continually dribbling urine. Took beef tea and milk freely.

Aug. 10, 7 P.M.—Temp. 105.6°; pulse 132. Was restless all night in spite of opiates.

Aug. 11, 6 A.M.—Temp. 104.8°; pulse 124. Emplast. canthar. applied to back of neck and an ice cap kept on head all day. Took nourishment readily but was delirious at times. At 2.15 P.M. temperature was 105.8°, pulse 142; at 3 P.M. temperature was 106°, pulse 142; at 6 P.M. temperature dropped to 105.2°, and pulse was full and strong. Was given 15 grains antipyrin, and heart's action rapidly weakened. Ordered tinct. digitalis 10 drops every 3 hours. Enemata again tried and comp. cath. pills, with no effect.

At 9 P.M., pulse being stronger and temperature remaining at 105° , she was given 15 grains more of antipyrin.

Aug. 12. 12.15 A.M.—Temp. still 105° , and patient delirious; gave third dose of antipyrin.

7 A.M.—Has not slept at all since the 10th inst. Gave cath. pills again.

9 A.M.—Temp. 105.2° , pulse 140, and feeble. Antipyrin having no perceptible effect except to weaken heart's action, was discontinued, and dose of digitalis increased. Patient seems brighter and is more quiet. Another blister to back of neck.

3 P.M.—Has slept two hours and bowels have moved three times, but her condition is much worse. Pulse at wrist almost imperceptible.

5 P.M.—Temperature suddenly ran up to 107° , and pulse too feeble to be counted.

7 P.M.—Temp. 108.4° . Patient is unconscious and her breathing stertorous. Usual restorative measures were employed, but patient died quietly at 8.30 P.M.

The convulsions gradually lessened in frequency and intensity from the time of her admission until the evening of the 11th inst. None were noticed after that.

Dr. Sellhausen called at the hospital August 10th and stated that he attended the woman during her confinement, and that she was delivered by forceps. The perineum was ruptured, sutured, and healed by first intention. She was seized with convulsions on the thirteenth day after delivery. Her extremities became rigid and her jaws locked. He gave her one-fourth grain morphia and 20 grs. chloral hydrate every two hours.

I have contented myself with the simple recital of this important case, the first I have seen after sixteen years experience in a lying-in asylum. To those interested in the subject, a perusal of Dr. Garrigues' article in the *American Journal of Obstetrics*, Vol. xv, October, 1882, will not be without profit; also the case reported by Dr. Boorman, of this city, and read before this Society May 18, 1887, with the discussion following.

DR. BOORMAN: Was there hæmorrhage or laceration of the cervix? What was her temperament? Was she subject to spasms or hysteria?

DR. MURPHY only knew what Dr. Sellhausen had told him. When she was brought to the hospital she was suffering from stupor alternating with delirium. There were jerkings about the face and neck; the opisthotonos would come on and her head would approach her heels, and finally she would give a bolt and almost fall out of bed. She was plethoric.

DR. BOORMAN: Tetanus occurring after labor at full term is very rare, but that occurring after abortion is more common. Callabin did not have a case in 46,089 labors. In 1849 P. Anbinaus reported three cases. Merriam collected 10,190 "cases of difficult labor with 106 deaths, and only one died of tetanus." Curling thinks it is more likely to follow lesions of the cerebro-spinal than the sympathetic system. There was either laceration or hæmorrhage in the cases he examined. In only two were the labors perfectly normal.

DR. GARNETT: Puerperal tetanus can hardly be caused by lacerations of the cervix, but must be due to some constitutional peculiarity. In forty years of practice he has never seen a case after a labor at full term. He has seen one follow abortion.

DR. THOMAS TAYLOR then presented some

FACTS IN RELATION TO EMACIATION.

(See p. 265.)

DR. BUSEY asked Dr. Taylor if there were any distinct characteristics by which ordinary people could distinguish oleomargarine from butter?

DR. TAYLOR: It is very easily distinguished. The crystals of oleomargarine may be detected with the naked eye by placing a small portion between two slips of glass and holding it up to the light, the translucent particles being crystals of fat; butter under like conditions presents an even cloud.

DR. FRIEDRICH: Can anyone tell oleomargarine from butter in the market?

DR. TAYLOR: It can be told by the taste and smell. Oleomargarine has no odor and a lack of taste, while butter has a pleasant odor and taste.

DR. SCHAEFFER: The subject of this paper, viz.: the discrimination between different kinds of fat, presents two aspects: one in a biological light, as bearing on the possibility of distinguishing between different species of mammals by a supposed distinctive structure of the tissues in each; the other in a sanitary light, as it bears on the possibility of detecting fraudulent adulterations of butter as an article of food.

While I have not examined so extensive a list of fats as those mentioned in the paper, I have arrived at the conclusion that the microscope is not a safe guide, with our present knowledge, when we endeavor to distinguish animal fats by their crystalline structure alone. The gentleman's statement, that all butter showing small crystals visible to the eye on pressing some of the sample between two glass strips must be rejected as spurious, is an erroneous one, as crystals of salt are frequently found in good "firkin" or "tub" butter. Is it not also illogical to expect to find a similarity between the solid fat of the sheep, hog, etc., and the oily product of the cow's lacteal gland—a gland hypertrophied by domestication and artificial selection? The use of solid fats as a remedy in tuberculosis is contraindicated by the proverbial distaste of patients for such food.

FRENCH SURGICAL CONGRESS.—The third session of the French Surgical Congress will be held in Paris, from March 12th to the 17th, in the large amphitheatre of the Administration de l'Assistance Publique, 3 Avenue Victoria. Professor Verneuil will preside. The following questions are down for discussion: 1. The Treatment of Gunshot Wounds of Viscera. 2. The Value of Radical Treatment of Hernia as regards Permanent Cure. 3. Treatment of Chronic Empyema. 4. Recurrence of Malignant Growths after Operation: its Causes and Prevention.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

[FROM OUR OWN CORRESPONDENT.]

Antiseptic Treatment of Boils—Enlargement of the Breasts in Tuberculous Subjects—Angina Pectoris of Syphilitic Origin—Strophanthus.

Professor Verneuil, well known as the champion of conservative surgery, lately made a communication to the Academy of Medicine on the antiseptic treatment of boils and carbuncles. The author observed that the treatment of carbuncle has greatly varied within the last forty years, but has gradually become less surgical, without on this account being less efficacious. After having tried in common with other surgeons the old method of free incisions and punctures the result of which was anything but encouraging, Professor Verneuil resorted to the thermocautery, followed by carbolic acid dressings. But as he now obtains the same results with the carbolic acid spray alone composed of a 2 per cent. solution which he employs for two hours daily in two, three, or four sittings at the convenience of the patients, and with a powerful instrument. This treatment is adapted to all the forms, to all the phases, and to all the stages of the disease. At the outset the carbuncle has the character of being aborted. Later on, should this result not have been attained, and the disease progresses, when perforation and mortification of the dermis have commenced and when suppuration and the elimination of the cores of the abscess are proceeding, this treatment limits the sphacelus, favors the separation of the sloughs, carries off mechanically the pus, disinfests and detersges the wound, and lowers the body temperature which is accompanied by the cessation of the general symptoms. When the subject is not cachectic, the granular membrane once detersged has generally a good aspect, and cicatrization proceeds as quickly as the extent of the loss of substance and the suppleness of the surrounding integuments would permit. Dr. Perrin, of Val-de-Grâce, stated that he employed another method with success, which consists in prolonged baths in hot water, and the application of a cold starch poultice during the night. A discussion followed in which several members took part. Dr. Le Roy de Méricourt, an old navy surgeon, did not believe in the microbian nature of boils and carbuncles. As to the treatment, he states, that if it be true that the carbolic acid acts as an antiseptic, he thinks that it would be preferable to practice an injection into the substance of the carbuncle, as is done with the tincture of iodine in malignant pustule. Should the patients feel relieved and the disease abated by the carbolic acid spray, he believes it to be due to the cold water and not to the acid. Several other members then gave the result of their experience, all adhering more or less to the old method, that is to the medical and surgical treatment, although there was a manifest tendency towards the former. To the objections that were made against the use of the carbolic acid spray, Professor Verneuil retorted that those who had not tried his method had

no right to criticise it. Moreover, although he has now adopted this method as a general rule, he did not wish it to be inferred that this was done to the exclusion of operative measures in suitable cases but that he employs the thermo-cautery in preference to the knife.

Tuberculous subjects sometimes present enlargement of the breasts, which, in certain cases, assume an inflammatory character. Leudet, of Rouen, brought to the notice of the Congress of Grenoble, in 1885, several cases belonging to this first category. In his thesis for the doctorate, entitled: "Contribution to the Study of the Hypertrophy of the Mammary Gland in Pulmonary Tuberculosis," Dr. V. Allot states that, from his personal observations, he found that the development of the breasts takes place in an indolent and progressive manner. The mammary glands never attain a very great size, but the emaciation of the body contrasts with this development of the breasts. The skin presents its normal character. When a breast thus hypertrophied is examined with the hand, one feels the sensation of a hard mass, including the whole gland, without any adhesions to the skin or to the deep parts, and no puffiness of the subcutaneous cellular tissue is observed. This affection never terminates by suppuration, the regression of the breasts is never complete, and the nodosities in them always persist. In an anatomical point of view, remarks the author, the malady is constituted by an abnormal development of the fibrous tissue forming around the ducts and the lobules of the gland thick zones, diffused, and which tend to atrophy the glandular elements. The absence of abscesses of tubercles, of glandular enlargements remove the idea of mammary tuberculosis. The author concludes that this hypertrophy of the breasts is in reality caused by a chronic interstitial mammitis.

In the *Annales de Dermatologie et de Syphiligraphie*, Dr. Hallopeau contributes an article on angina pectoris of syphilitic origin. Syphilis, according to the author, may give rise in its secondary and tertiary stages, to attacks of angina pectoris, and these attacks may present the classical type of this affection. At times the attacks are complicated with other troubles of innervation connected with a reflex excitation of the vaso-constrictor or of the vaso-dilator nerves, thus provoking abnormal sensations of cold or heat in one half of the body with shivering and hyperhidrosis, and may give rise to paresis by ischemia of the motor centres. These fits are attached to the development of specific neoplasms on the course of the cardiac plexus or in its immediate neighborhood, and they may be modified in their character under the evolution of the lesions, of their arrangement in the points primarily affected and of their extension to other branches of the sympathetic nerve. These attacks the author remarked, may be cured in a few days under the influence of the mercurial medication or of the iodide of potassium, and so thoroughly that they seldom or never return.

At a recent meeting of the Société de Thérapeutique, a discussion took place on the therapeutic action of strophanthus. According to the experience

of Dr. Constantin Paul and other members of the Society, strophanthus is less a cardiac medicament than a feeble diuretic, but of persistent effect.

A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York County Medical Association—Dr. Alonzo Clark—The Medical Profession as a Whole, and Physicians as Individual Members—The Care of the Pauper Insane.

The last meeting of the New York County Medical Association was occupied by the addresses of the retiring and incoming Presidents; both of which were able and interesting. Dr. John Shrady, whose term of office then came to a close, reviewed the work of the Association, and expressed the conviction that all the members could truthfully say that the year had added somewhat to their mental stock and directed their thoughts into newer channels. Having referred to the past year as being, in a general way, not very notable for brilliant discovery, although much good work had been done in the line of corroboration of that which is valuable, he characterized the Ninth International Medical Congress as a success, and averred that there were but few leaders capable of directing intelligent thinkers by the thousand; maintaining that no one man or body of men can lay claim to indispensability. He said that the phantasm of a possible medical centre for so large a territory as the United States had been dispelled forever, and pointed out that there had been many surprises, chiefly in the direction of the newer men, who snatched at the prizes abandoned by the older favorites.

Dr. Shrady attributed the success of the Association to the absence of medical politics, the encouragement given to latent talent, the elimination of dogmatism, the suppression of offensive individualism, and the care taken to make the contributions as exhaustive as possible. The acrimony of debate, he said, had gone out with the bickerings of the politician and the vapors of the pseudo-reformer.

He then alluded, in feeling terms, to the death of Dr. Alonzo Clark, one of the greatest of New York teachers, who, he claimed, was just to all, supercilious to none, safe almost to plodding, and free from dogmatism; and who, as an honest toiler, with no meretricious aids, always gave what was best of his loyal nature to science and to truth. Avowing that there was no courtesy in science, he disclaimed all hero-worship, and earned, along with the best of his colleagues, the laurels of the ideal physician.

Dr. Shrady introduced his successor in office by a graceful reference to the verdict of the Scottish clans contending for precedence at a feast: "Where sits MacGregor, there is the head of the table."

The address of the President-elect was a thoughtful and carefully prepared essay devoted to reflec-

tions concerning the medical profession as a whole and physicians as individual members thereof, and the following extracts may serve to afford some idea of its character. The exact status which the profession holds in the complicated arrangement of human society is in some respects peculiar. The interests with which it deals are obviously second to none in importance. The most natural instinct of man is to preserve his health, and much of his time and attention, in one way or another, is expended in serving this object; and, notwithstanding his depraved inclinations and the tendency to excesses, it lies as a substratum in his moral nature, even though it may be dormant.

Although our relations with the community are close, and affect those matters which lead all others in importance, so far as this life is concerned, yet it is in a single line of duty; our points of contact with the world at large are few. We are to a certain extent a segregated class, and virtually constitute a caste; while most of the other higher pursuits in life bring their members more or less into the range of public notice, and the subjects which they agitate mingle to a considerable extent with the topics of public interest. A certain portion of the community, as individuals, certainly do manifest a desire to know something of medicine, and those with this inclination, whose temperaments are by nature tinctured with the element of vanity, occasionally pique themselves upon their scientific acquisitions. With a person of this description for the physician to acquit himself judiciously, serving the best interests of the patient and at the same time having the difficulties presented by a garrulous subject to deal with, is often a problem not easy of solution.

With many the vague and popular notions handed down from antiquity still hold their sway, with their admixture of mystery, superstition and deceit. The forms become somewhat modified under the progress of education and advance generally, but they still retain the root which belonged to their original type. It is only a change of dress suited to the fashion of the day. Higher in the scale of enlightenment comes he who does endeavor to mould his actions and discover his best interests by the judicious exercise of the light that is in him; but it is too frequently the case that one whose experience and judgment would enable him to successfully conduct a difficult mercantile project, or another who could apply the highest order of reasoning to a profound principle of law, cannot hold out against the assaults of promise, plausibility and pretence in seeking medical resources. There are others, again—and they do not belong to any particular station in life, nor do they always have the advantages of education or those associations which tend to enlarge the ideas—who, from an innate judiciousness, which they are able to exercise in all directions, in medicine as in other matters, think that the wisest course is to follow the dictates of common sense; and they therefore apply to those who, by education, training and experience are supposed to be qualified to attend to their medical needs. Were it not for these, who by the moral support and encouragement they afford,

do much to sustain him, the path of the physician would indeed be gloomy.

That the avenues to knowledge are open for all goes without saying; but a successful search for the choicest fruits is only accomplished upon certain conditions. It involves an intensity of interest and fixedness of purpose which falls little short of a devotion, and it calls for an amount of industry and self-denial such as only few can practice. He who cannot furnish these qualifications will reap as his harvest little but the results of a blasted or spurious germination. There is a vast difference between a knowledge that is ample, well-ordered, and in a condition ready to be applied with effect to a definite, useful purpose, and that which is the offspring of a few smattering, disconnected notions, of fancy, and of false intuition.

The arduous and responsible duties of a medical man in active practice call for some diversion from their wearing effects. There must be some resource by which the mind can occasionally be lifted from the weight which forces it in the embrace of an anxious contemplation; but it does not necessarily follow that the relief is to be sought for solely in light and frivolous entertainment. There are other channels which, in part at least, afford a means of obtaining the required relief; and even the pursuit of some study of a scientific or other character will often fulfil the demands of nature in this need. I do not claim that the practice of medicine is exceptional in presenting more troubles and vexations than is experienced in some other pursuits; but it will, I think, be conceded that there is no other in which the emotional faculties are more frequently exercised or strained to a higher degree. The amount of permanent damage to the nervous system that would occur in the application of the mental faculties over a considerable time—provided the capacity was proportioned to the magnitude of the daily effort required, and the application not begun at too early an age—would probably be small, if it was purely of an intellectual character; as is evidenced by the longevity and retention of the mental powers of those who devote their attention to philosophy, metaphysics, and the sciences generally. It would hardly be appropriate to this occasion to enter into any extended relation of the situations which exemplify the physician's anxieties; we know well what they are, and we all feel their weight. They vary, of course, with the exigencies of the case, but it may be safely asserted that there is no single professional act performed of which they constitute no part.

It is perhaps not out of place to say a word concerning the claims of medical societies upon its members; and in view of what has been alluded to in the necessity of the physician to have some diversion of his attention from the daily conflict with disease, this has a partial application. We might say that here is the home-circle of our professional brotherhood; here you can meet with those who have pursuits and sympathies in common. Whether you are fortunate enough to be distinguished or not, if you bring those attributes which belong to the

worthy physician, you have the stamp of nobility, and the hand of fellowship is extended to you; while your efforts here will tend to round out and complete the professional character to its proper symmetrical proportions.

At a recent meeting of the Academy of Medicine Dr. Samuel Sexton introduced a resolution (which was unanimously adopted), endorsing the bill prepared by the State Charities Aid Association, in regard to the care of the pauper insane in State hospitals, and recommending its enactment by the Legislature.

In seconding the resolution, Dr. C. R. Agnew said that for thirty years he had been interested, with others, in the amelioration of the condition of the pauper insane in the State of New York, and that the first result of the agitation of this subject had been the establishment, by the State, of the admirable Willard Asylum. Later those at Binghamton and Poughkeepsie had been started. This opening of these institutions had withdrawn a considerable portion of the pauper insane from the county poor-houses; but now an effort was being made to establish local asylums for the insane in various counties.

The chief reasons alleged for this movement were the saving, to a considerable extent, of the cost of transportation of insane patients, and because it was claimed that the cost of maintenance in the State hospitals was unnecessarily great. One of the counties declared its willingness to undertake the care of its insane at a cost not to exceed 97 cents per head per week, and another for \$1.19. At the Willard Asylum, where the number of inmates is now nearly two thousand, the expenses could not be reduced below \$2.25 per head per week; but this included the best scientific care by expert physicians and specially trained nurses, the amusement and intellectual training of the patients, and their employment in the work-shop and on the farm connected with the institution. The counties, however, did not propose to give the same character of care to their pauper insane as that given by the State hospitals, as this was impossible of attainment for any county at a weekly cost *per capita* of \$1.50, the charge to which the counties were subject by the provisions of the State Charities Aid Association bill. The expense of new or improved county buildings, and of a larger number and higher grade of attendants—to say nothing of maintenance and medical treatment—would impose a heavier burden on the tax-payer of the county than the additional increase of his State tax required to perfect the system already established by the State.

It was a fact, also—Dr. Agnew continued—that some of the counties had tried the experiment of having their own insane asylums, and unsuccessfully. Thus, Rockland county had erected one at an expenditure of \$20,000, and it had now been abandoned. If the pauper insane were cared for by the counties they would be under the charge of the supervisors and superintendents of the poor, and these men, besides knowing nothing of the proper care of the insane, were altogether too close to the tax payers. This class of cases could, in fact, be properly

taken care of only in an institution where there was a board of managers which was directly responsible to the State, and where everything was done in the full blaze of public scrutiny; and in the State hospitals of New York he believed that the most enlightened modern treatment of the insane was carried out in as thorough a manner as was at present attainable.

P. B. P.

MEDICAL SCIENCE.

Dear Sir:—If physicians would have the following or something similar published in the newspapers and popular press everywhere, they would greatly help to enlighten the people and diminish quackery of every kind:

There appears to be a great misapprehension existing respecting the character and scope of medical science. It does not consist of a single *pathy* or *ism*, or of many shreds of *pathies* and *isms*, but of all knowledge, all truth pertaining to life, health, disease, deformity, injury or abnormality of every kind, and their treatment, in their most extended relations. Hence, *pathies* and *isms* do not represent and have no place therein, while the real knowledge and truth included in every phase of thought, *pathy*, *ism*, or otherwise, belong to and are comprised in the general science of medicine, which is thus of universal compass. The application of the term "allopathy" to legitimate medicine is a misnomer and savor of quackery, while that of "allopathist" applied to the regular physician, which he repudiates, is libellous and actionable as expressive of an untruth, a stigma and reproach. The only *pathy* at all applicable to the science of medicine is anti-*pathy*, or antagonism to all disease; but even this is too limited and misleading as to its nature and extent, as it only includes the mere prevention and treatment of disease, and omits all the collateral branches of biological, and many of surgical science. This law of antagonism and principle of *counteraction* applies to curative medicine the same as to everything else, as it is uniform and universal, and does not admit of any exceptions, much less such a sophistical dogma as "*similia similibus curantur*," or like cures like of homeopathy. The dictum that to cure one disease it is necessary to produce another of the same kind or similar to the one existing, and then that this like stronger and conquering disease gets well of itself, which it must do if so as asserted, is sheer assumption and nonsense. The victim of one disease does not want, and should not be afflicted with another disease of any kind whatsoever, whether the same (isopathic), similar (homoeopathic), or dissimilar (allopathic); but wants to get well in the most direct way as easily and speedily as possible, which it is the object of scientific medicine and physicians to accomplish by all the most appropriate physical, mental and moral means which can be favorably brought to bear upon the case by this law of antagonism with counteracting and antipathic agencies, of which mere drugs of themselves are often of minor importance, though generally useful and frequently indispensable. Yet, in general, alimentation is the

basis of medication, and often of itself sufficient to cure as well as prevent disease, the regulation of the diet, with the other hygienic measures of pure air, light, heat, clothing, rest, exercise, mental and moral conditions, etc., according to circumstances, being necessary also in unison with this system of counteraction or *anti-pathy*, as right living is essential for the restoration as well as preservation of health. Therefore, for the removal as well as prevention of disease, with abnormalities of all kinds, this law of antagonism prevails, as *anti-pathy* inculcates and *anti-pathists* adopt such measures as are counteractive to disease as well as every other derangement, whether of a physical, mental or moral nature, that will restore the equilibrium of health, consisting of anything and everything material, dynamical or spiritual, appropriate therefor, the precise character and combination of which depend upon the peculiarities of the case.

With regard to drugs alone, they are administered in every form, proportion, variety and way: crude or refined, single or multiple, separate or combined, small or large doses; each have their special application and are employed as necessary, the judgment of the physician deciding the particular kind, form, quantity, simple or complex nature and condition, whether organic or inorganic, mineral, vegetal or animal, solid, liquid or gaseous, and otherwise, singly or combined, specifically adapted antipathically to the case under treatment. But scientific physicians discard all exclusive dogmas, *pathies* and *isms*, as being too narrow and sometimes fallacious, though they counteract disease as well as abnormality of all other kinds by this sound, common-sense law of antagonism or *anti-pathy*, which may not always save life, just as carbonic acid and water against fire may not always save property; yet they are specific therefore nevertheless, assured that it is the only rational method and true system to cure as well as prevent disease; that the science of medicine is one and universal in its range and application, while ever progressive, new discoveries, new truths, new remedies and other instrumentalities being constantly added in its onward course towards perfection, despite all dogmas, *pathies* or *isms*. Thus, in the estimation of all true physicians,

"No pent-up dogma restricts our powers,
The boundless universe is ours."

GEO. J. ZIEGLER, M.D.

Philadelphia, Pa.

SYMPTOMATOLOGY OF TYPHOID FEVER.

Dear Sir:—In THE JOURNAL of January 28 your correspondent in Cincinnati describes the typhoid fever prevailing in that section, during the last summer, as differing in symptomatology from the fever described in text-books. The general run of the disease as it occurred here during the spring, summer and autumn of 1887 presented about the same symptoms as given in the article referred to. The temperature, always high at the beginning, 104°–105.5°, would either gradually decline to normal within the first ten days or, dropping to 102°–103°,

remain at this for one or two weeks. Headache and backache were the most prominent symptoms complained of by the patients, many tracing the latter directly to some exertion, and asking for relief from a "lame back." These symptoms were always accompanied by a general feeling of lassitude. During prevalence of the cold weather, both in spring and autumn, bronchitis was a common complication; hypostatic congestion of the lungs, however, occurred in only the most severe cases. For abdominal symptoms we had pain extending from the right iliac fossa, along the course of the colon, to the sigmoid flexure, with, in some cases, diffuse tenderness on pressure throughout the entire abdomen. Constipation was the rule, diarrhoea the exception; tympanites but seldom very marked. Intestinal hæmorrhages were few, but severe. As no post-mortems were held, ulceration of Peyer's patches could not be definitely established. Hæmorrhages of the nose were not often observed.

As to treatment of the cases, quinine, natr. salicyl., and antipyrin did not act satisfactorily in my hands, for, if given in doses large enough to depress the temperature, it would remain so only for a short time, returning to its original height in the course of ten or twelve hours, notwithstanding the constant administration of the antipyretic.

The remedy *par excellence* proved to be the ammonium salicyl., to which my attention was attracted by reading an account of the usefulness of this salt in typhoid and septic fevers, in the *Transactions of the State Medical Society of Wisconsin*, by Dr. J. R. Barnett, of Neenah, Wis. It invariably reduced the temperature to 99°-100°, keeping it there during the entire course of the disease, diminishing the rate and force of the pulse and causing, in a majority of cases, profuse diaphoresis. When given early, within the first few days of manifestation of the disease, it would generally break up an attack, the patient being able to be up and about the house in two or three days. In cases not seen until the end of the first or beginning of the second week, such drugs as were indicated were added to the am. salicyl. mixture. Tincture of digitalis, when the pulse was weak, was frequently given in 5-drop doses every two hours for ten or twelve days at a time to counteract the depressing action of the salicylate. Tr. opii was added in the few cases that were accompanied by diarrhoea. Bromide of potassium was always used in conjunction to combat the severe headache, and when the patients complained of pain and weight in the back part of the head and neck the fluid extract of ergot was used. The turpentine and opium mixture advised by Dr. N. S. Davis, without the opium, was given in all cases presenting a dry state of the tongue and sordes on the teeth.

I am unable to give an explanation of the action of this drug, but can say from experience gathered at the bedside, that it has proved itself to be a very efficient remedy in the treatment of this disease—shall we call it typhoid fever? Some undoubted cases of typhoid fever occurred during the time, but the general appearance of the disease was as described.

A remarkable circumstance I omitted to mention is that the skin was always hot and dry, except in the few cases of genuine fever above referred to, while our text-books claim it to be always moist and clammy. I did not keep an exact memorandum of any cases, but a few are well enough remembered to cite as giving an illustration of the prompt action of the ammonium salicylate:

Fr. G., æt. 21, German, laborer. Began to administer medicines to him on the ninth day of the fever at 7 P.M. Had a few days previous to this given directions about opening the bowels, and general instructions regarding the treatment, to his father, a German minister, who is a very devout disciple of electro-homœopathy. At the time mentioned the young man presented a woe-begone appearance, being well plastered with white, red and green electricity à l'*Electro-homœopathie* to relieve him of a distracting headache. His face was flushed, skin hot and dry, tongue covered with white fur, breathing accelerated, pulse hard and full, beating 120 per minute; temperature 105.2°. There was considerable tenderness along the course of the colon; bowels had been moved with mag. sulph.; the stools were watery, containing flakes of a yellow color. I placed him at once on a mixture containing am. salicyl. gr. viii, tr. aconiti gtt. i, pot. brom. gr. vi, ext. ergot fld. gtt. iii to each dose, with directions to administer the medicine every two hours during the night. Next day at 10 A.M. his temperature was 97.8°, his pulse soft and full, 96 per minute, he was perspiring freely and entirely free from headache. His bowels had not moved, and I ordered one tablespoonful of castor-oil to be given and repeated in three hours in case his bowels did not act. The dose of the mixture given above was reduced one-half and, as the tongue evinced a tendency to become dry, turpentine in 8-drop doses every four hours was prescribed. At my next visit, two days later, the patient was out of bed, and one week after this he did the chores about the barn. His temperature never rose to above normal after the first decline.

The other case occurred in February, 1887, before I had any knowledge of the value of the am. salicylate as an agent in the treatment of these fevers. This was a case of more than ordinary severity; one the books assign as usually terminating fatally, for the temperature ranged between 103.5° in the morning to 105.5° in the evening for about three weeks.

C. L., æt. 24, nat. Swede. The entire family, consisting of eight persons, went through a course of the fever. This patient was the last one to be attacked and proved the most severe. The abdominal and head symptoms were about the same as those described in the previous case, in the beginning of the fever, the stools and urine passing involuntarily about the third week, while an active delirium that set in during the latter part of the first week continued night and day for three weeks. The pulse was 120 during the day, running up as high as 140 during the night, while the temperature ranged between 103.5° and 105.5° for the same length of time. Quinine, salicyl. of soda, antipyrin (in horse doses, as the consulting surgeon expressed it), accompanied by moderate and cold effu-

sions, were each successively used, without ever reducing the temperature for more than 1° or 1.5° longer than one to two hours. Every morning I would drive out expecting to find my patient dead, only to hear that he had passed a very bad night. Often I watched by his bedside all night not expecting him to live until morning.

I saw Dr. Barnett's paper after this patient had been under my care about three weeks, and procured some am. salicylate, which I began to administer in 15-grain doses every six hours, but not being satisfied with its action, the mode of administration was changed to 8 grains every two hours. Within eight hours the temperature began to fall, and although there was a temporary rise every evening, it reached normal at the end of the sixth day. He made a slow and tedious recovery, and it was fully eight months before he returned to work. During the course of the disease such remedies were administered at different times as the symptoms called for. I found the various formulæ of my honored teacher, Dr. N. S. Davis, as given in his lectures, most excellent to combat the delirium; later on the involuntary discharges from the rectum and bladder and the dried and furred state of the tongue.

As your correspondent referred to at the beginning of this article, I also ask the question: What is the nature of this affection? He gives as a possible solution a contaminated water-supply, the streets having been torn up, and the water being below its usual level in the river; but here none of these causes can be found, for the fever occurred alike in city and country, visiting the settler in his log cabin in the midst of the pine forest, the farmer in the well cleared country, and the city dweller in the centre as well as in the outskirts of the city. The supply of drinking-water was derived at different places from the clear springs, running brooks, wells and the city hydrants, while there seemed to be no special influence at work, either as to the duration or severity of the disease. The rate of mortality at one time was quite large, rather more than the average percentage.

D. SAUERHERING, M.D.

Wausau, Wis., Feb. 14, 1888.

UNETHICAL USE OF PHYSICIANS' NAMES.

Dear Sir:—I have a little grievance to bring to your attention, and to that of the profession at large.

In October last, there came to Charleston, Messrs. Bernhardt and Matthez, "scientific opticians" from Chicago. Immediately upon their arrival here they visited all of the prominent physicians, explained that they were opticians—not oculists, nor did they interfere in any way with the oculist—and asked these physicians to give them their names in recommendation of their (the opticians') work, in order that they might publish them. Strange as it may seem, many of our most prominent physicians readily signed their names without knowing anything more of them than that they had good names of other men.

Before they could publish these names I succeeded in having a special meeting of the County Medical Society called, and stated my case. I said: "I am

a specialist in diseases of the eye and ear, a member of the American Medical Association and of your Society; I observe the rules and abide by the Code of Ethics; yet you have given your names in recommendation to men entirely unknown to you, who are not physicians, who say they do not interfere in any way with the oculist, but whose actions and further admissions belie this, for they test the eyes and prescribe glasses for all who may come. The prescribing of glasses is known by many well-informed physicians to be a large factor in the practice of the oculist and one that requires the most careful attention; and yet these men are bold enough to say they do not interfere with the practice of the oculist. I consider that you have done me an injustice, and that when your names appear in the daily press recommending these men that my practice will be materially damaged, and my patients inclined to lose confidence in my ability."

Upon this statement the members of the Society present unanimously consented to withdraw their names, and so they were not used. Furthermore, these men do not hesitate to state publicly that Knapp, Agnew and Chisolm, not to speak of the lesser lights, know but little about prescribing glasses, and they tell persons who may have been treated by any of the above mentioned, that their eyes have been murdered, etc. Their charges for glasses are most exorbitant, ranging as high as \$50 and perhaps more. One poor woman who consulted them afterwards came to me. Upon examination it was found that she had cataract in both eyes, and their combined vision was $\frac{2}{20}$. Of course a glass would be practically useless. They advised glasses that would make her see and would cost *fifty dollars*, but if she wished her eyes *put out* to have them *operated* upon.

Now, my cause of complaint is as follows: Of course I cannot prevent their selling glasses, nor can I regulate their charges; but I do think it unkind and not strictly according to the Code of Ethics for physicians standing high in the profession, members of the American Medical Association, and Professors in regular colleges, to give their names for publication, thereby misleading the public and injuring the practice of professional brothers who are trying conscientiously to stem the rapid current. I enclose one of their advertisements which appears several times a week in each of the daily papers. The names therein are sufficient to bring these people practice. Very truly yours,

CHARLES W. KOLLOCK, M.D.

Charleston, S. C., Feb. 16, 1888.

CONGENITAL PHIMOSIS.

Dear Sir:—I find in THE JOURNAL of November 19, 1887, an article on "Congenital Phimosis," read before the Section on Diseases of Children at the thirty-eighth annual meeting of the Association, by Professor Wm. S. Stewart, of Philadelphia, in which he clearly sets forth the reflex manifestations resulting from this abnormal condition, as every careful surgeon of experience has met them, and as have as often been overlooked by the careless diagnostician,

with the result of failure in treatment; leaving the little patient to suffer and disappoint the expectations of over-confident and anxious parents. To overcome the difficulty he advocates dilatation instead of circumcision. Any means by which the abnormal condition can be removed successfully without a bloody operation, and comparatively painlessly, will be gladly received by the profession, and with delight by parents having children so afflicted.

But how a four-bladed instrument, of sufficient strength to accomplish the dilatation, can be thrust into an opening not larger than a pin's head, and dilate the parts without pain or blood, appears to me to be beyond the comprehension of the average surgeon; and an opening no larger than stated is often found. Dr. Stewart, however, very prudently cautions in using his instrument that it requires care not to get the blades into the urethral meatus; and also not to dilate too rapidly lest we tear the tissues and cause pain and bleeding. Consequently it will be necessary to dilate not only once or twice, but often, unless the tissues are torn, to overcome the difficulty, thus rendering the operation many times more painful and tedious than circumcision properly performed. I admit that circumcision as generally performed, is bloody, painful and tedious. But when properly performed it is very simple, comparatively bloodless, and attended with very little pain. In the ordinary method of operating it is necessary to stitch the mucous membrane to the skin after the removal of the redundant prepuce. But when properly performed the necessity for this part of the operation is avoided. All that is necessary, is to draw the prepuce well forward and clasp it pretty firmly between the blades of an ordinary dressing forceps, in front of the glands, then cut away all in front of the forceps either with scalpel or scissors, preferably the latter, remove the forceps and let the skin retract, then clip out of the mucous membrane over the glands a V-shaped piece up as far as the retracted skin. Apply antiseptic dressing and leave the case to nature, and it will give no further trouble, unless there be some inflammatory complication. But we are in no more danger from this complication than we are by dilatation, and from any view of the case circumcision is certainly preferable.

JAMES LAMB, M.D.

Aurora, Ind.

REMOVAL OF HYPERTROPHIED PHARYNGEAL TONSIL.

Dear Sir:—I have just seen an article in the JOURNAL of January 28, by Dr. H. Gradle, of Chicago, on "Hypertrophy of the Pharyngeal Tonsil," in which he describes various instruments for the removal of such growths. He makes no mention, however, nor do I see it mentioned in any work that I have consulted, of a simple device that has served me in several instances with much efficiency. I make use of one of Sims' sharp uterine curettes, the stem having been bent at a right angle about $1\frac{1}{2}$ inches from the end. With the aid of a self-retaining uvula and palate retractor, which I also devised (See *N. Y. Medical Record*, Jan. 14, 1888), any portion of the

posterior pharyngeal wall can be curetted away, or any small growth removed from the posterior nasal or naso-pharyngeal space with ease. Jarvis' curved snare being used for the larger growths. The uvula retractor referred to above has proved of especial efficiency in all such cases and particularly when very large posterior polypi are present, and where under any circumstances the use of the tape and clamp method would be objectionable, if not altogether impossible, but with the palate retractor the parts are easily pulled forward and held so while both hands of the operator remain free to use the mirror and snare or cautery wire.

W. PEYRE PORCHER, M.D.

Charleston, S. C., Feb. 6, 1888.

ASSOCIATION ITEMS.

ARRANGEMENTS FOR THE ANNUAL MEETING, MAY, 1888.

Members of the Association will be pleased to learn that the organization of the Committee of Arrangements for the entertainment of the American Medical Association in Cincinnati in May, has been completed, and that long strides have been taken towards securing for the Congress scientific work of high order and social features that will be at least acceptable. Dr. W. W. Dawson, the Chairman of the Committee, has associated with himself a number of representative medical men to aid him in the work of the Committee. To facilitate this work the following Sub-committees and Chairmen have been appointed.

Sub-committee.	Chairman.
1. Section-Work,.....	J. T. Whittaker.
2. Halls and Decoration,.....	B. Stanton.
3. Entertainments,.....	N. P. Dandridge.
4. Exhibits,.....	J. C. Culbertson.
5. Programme,.....	J. Kansohoff.
6. Reception,.....	J. T. Whittaker.
7. Finance,.....	S. C. Ayres.
8. Registration,.....	Jas. M. French.
9. Printing and Invitations,.....	J. C. Culbertson.
10. Transportation and Hotel,.....	Geo. Purviance.

Music Hall has been secured for the second week in May. Under its vast roof the various Sections of the Association can be easily accommodated. The seating capacity of the rooms for Section-Work varies from about 70 to 300. Their acoustic properties approach perfection.

By the advice of the Sub-committee on Section-Work, the following circular letter was addressed to the Chairmen of the several Sections, in answer to which a number of very satisfactory letters have already been received.

"In the endeavor to increase the interest in and concentrate the work of the special Sections, the Committee of Arrangements ventures to suggest to the Section Chairmen the advisability of selecting a special subject for consideration on the first and second days of the meetings of the various Sections, to be introduced by two, or at most, three papers and followed by general discussion; the remaining time to be occupied in the reading of other papers, presentation of specimens, exhibition of apparatus, etc.

"Should this suggestion be favorably received, the Committee begs an early response with specification of the subjects selected, names of referees to present the papers, and of members to open the discussions."

Two weeks ago a very largely attended meeting of the profession of this city was held at which vent was given to no little enthusiasm. Liberal subscriptions to the entertainment fund poured in, and in the evening it was established that the local profession would give their visiting colleagues a right royal welcome. Thus far but two entertainments have been positively decided upon. One a grand concert at Music Hall, the other, a reception at the Art Museum, to be followed by a collation. As time progresses other entertainments will doubtless be provided.

The question that may prove a stumbling block in the way of the Committee is associated with the giving of the annual dinner. We cannot accommodate more than three hundred (300). Will that many take the ticket at seven dollars (\$7.00) per plate? The "two kinds of tickets" clause of the mandatory resolution of the Association must be ignored on account of utter impracticability. Some of the members of the Committee are inclined to give up the idea of the banquet altogether. Others, however, are anxious to see it given, believing that if prominent men from the East and West were especially requested to attend, an excellent opportunity would be given those assembled at the board to bury past grievances, to dispel factional feeling, and in every way to strengthen the Association by restoring harmony.

JOSEPH RANSOHOFF,
Local Sec'y Com. of Arrangements.

SECTION ON MEDICAL JURISPRUDENCE. — The members that contemplate contributing Papers to the Section on Medical Jurisprudence of the American Medical Association, at the meeting in Cincinnati, May, 1888, are requested to forward the titles as soon as possible to the Chairman of the Section. The following have already been promised:

"Address by the Chairman of the Section," T. M. Reid, M.D., Baltimore.

"Paralytic States, their Relation to Testamentary Capacity," E. C. Spitzka, M.D., New York

"Medical Jurisprudence in Relation to Wills," Richard Gundry, M.D., Baltimore.

"Expert Testimony in Medical Jurisprudence," Orpheus Everts, M.D., College Hill, O.

"Fetichide, its Increase and Inadequacy of Law for its Prevention and Punishment," H. C. Markham, M.D., Independence, Iowa.

"Some Phases of the Civil Laws in reference to the Development of Man," J. W. C. Cuddy, M.D., Baltimore.

"Some Points in the Medical Jurisprudence of Insanity," E. N. Brush, M.D., Philadelphia.

"The Medico-legal Relation of the Inebriate to Society," I. N. Quimby, M.D., Jersey City, N.J.

E. M. REID, M.D., Chairman.

Baltimore, Md.

NECROLOGY.

CHARLES M. DUNCAN, M.D.

Charles M. Duncan, M.D., was born in Dummerston, Vt., July 1, 1808; died October 4, 1884. He was the only son of Dr. Abel Duncan, who was emphatically "the beloved" and successful physician of his day in Southern Vermont.

Dr. Duncan's boyhood was largely spent on the farm with his mother, with the advantage of attending the public schools and an occasional term at the academy. His book, of which he was always fond, was his companion while engaged in farm work. This occupation was uncongenial, and he found no difficulty in making choice of a profession. Perhaps the desire to be like his father, whom he always heard spoken of as possessed of every manly virtue, aided him in his choice. He commenced his medical studies with Dr. Knapp, of Dummerston, attended lectures in Boston and Brunswick, Maine, taking his diploma at the latter place.

In 1834 he located in Shelburn, Mass. He waited patiently for his work as the young physician must wait, meanwhile gathering about him solid and lasting friends. In patient and self-sacrificing labor he laid the sure foundation for strong and enduring friendships in the hearts and homes of the people which few, in any profession, are so fortunate as to attain. He soon took his place among the leading men of the town, and was ever identified with its interests. For more than twenty years he served as town clerk and treasurer, and in general was sought not more as a physician than as a friend and counselor. He became a member of the American Medical Association in 1866. The community is to be congratulated that is served by so earnest, faithful and conscientious a physician, by such upright and unswerving integrity in its business interests, and by one who proved himself so tender-hearted and sympathizing a friend, for more than fifty years, as did the subject of this sketch. The action taken and resolutions passed by the Franklin Medical Society upon the death of Dr. Duncan were fitting, and may be seen in the *Boston Medical and Surgical Journal*.

L. D. S.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING FEBRUARY 23, 1888.

P. A. Surgeon L. L. Williams, promoted and appointed P. A. Surgeon from February 10, 1888. February 23, 1888.

Asst. Surgeon J. O. Cobb, appointed an Asst. Surgeon February 21, 1888. Assigned to duty at Marine Hospital, Chicago, Ill. February 25, 1888.

Asst. Surgeon J. B. Stoner, appointed an Asst. Surgeon February 21, 1888. Assigned to duty at Marine Hospital, New York, N. Y. February 23, 1888.

Asst. Surgeon A. W. Condict, appointed an Asst. Surgeon February 11, 1888. Assigned to duty at Marine Hospital, Chicago, Ill. February 23, 1888.

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. X.

CHICAGO, MARCH 10, 1888.

No. 10.

ORIGINAL ARTICLES.

THE DIFFERENTIAL DIAGNOSIS OF URÆMIA.

BY CHARLES W. PURDY, M.D.,

OF CHICAGO.

HON. FELLOW OF ROYAL COLLEGE OF PHYSICIANS AND SURGEONS,
KINGSTON.

It will be my object in this paper to draw the line as sharply as possible between those comatose states which are sometimes mistaken for uræmia, and the latter condition itself. I am the more willing to undertake this task, believing that the importance of the subject can scarcely be overestimated. It is surely no uncommon experience with those who are engaged in active general practice to meet with cases in which men—especially those advanced in life—have been suddenly struck down in an unconscious state to which, unfortunately, too often death constitutes the speedy sequel. Indeed, so frequently is this picture presented to the professional eye, that in the aged it has come to be looked upon almost as a matter of course. To the mind the thread of possibility, by which depends the lengthened skein of life, grows so brittle with advancing years that its individual strands seem scarcely worth the efforts at strengthening. And thus the tears of friends, and perhaps the qualms of the scientific conscience are soothed by the reflection that as the leaves turn yellow they must fall; so the aged must die.

In a given case of unconsciousness of sudden onset, the result may be speedy death or recovery, depending very much upon the cause and the measures employed for relief. And this brings us at once to the importance of an accurate and speedy diagnosis in such cases.

A number of conditions accompanied by more or less complete unconsciousness are to be met with that may be confounded with uræmia. It is important that the symptoms and signs of these various states should receive the most careful consideration and study; for upon these we must often depend solely as data upon which to construct our diagnosis. The history and important facts bearing upon the case of course should not be lost sight of, since these frequently come to our aid opportunely in doubtful cases. Since, however, a state of unconsciousness precludes the possibility of gaining any definite oral information from the patient it becomes more necessary in these than in any other class of cases to be

able to readily construct the diagnosis from the symptoms alone.

In order to differentiate accurately uræmic coma from the various conditions with which it is sometimes confounded I shall first endeavor to draw a correct picture of the various phases of uræmia itself; and passing from this I shall consider the various conditions with which it is more commonly confounded; and lastly, I shall present in tabular form the chief features of each, that the observer may at a glance study their differential features.

Without entering at present upon the much vexed question of the nature of the uræmic power itself—which still remains an unsettled problem—it should first be noticed that it usually expends its greatest force upon the nervous system, and therefore we must look to the nervous system for the most prominent manifestations of this disorder. So far as the central nervous system is concerned, it is a somewhat remarkable fact that the uræmic poison usually acts upon the sensory and motor centres in diametrically opposite ways. Upon the sensorium the tendency is towards abolition of function—and consequently tending to insensibility and coma; while upon the motor centre—the medulla—exaltation or stimulation is produced—tending towards convulsions. Coma and convulsions then are the most common results of the more intense action of the uræmic poison upon the central nervous system; but in less intense degree of action the uræmic poison often seems to reverse this order—on the sensorium to produce excitement, delirium, etc., and upon the motor centre to produce a mild and transient paralysis. This latter fact should not be lost sight of since in the first place it is perhaps not generally known that uræmic coma and convulsions are often preceded by paralysis; and in the second place the occurrence of paralysis may lead the physician to mistake uræmia for apoplexy—more than one such instance has come under my observation within the past year.

Uræmic coma is rarely of very sudden onset, but is preceded by certain well-marked symptoms for from a few hours to several days or even weeks. The most constant and prominent of these prodromata are, headache, nausea and vomiting, exalted reflex sensibility of the voluntary muscles, increasing drowsiness, more or less decided diminution of the volume of the urine, and a peculiar odor of the skin and breath—uræmic. Among the less common prodromata are, acute visual disorders, dyspnœa, distressing itching of the skin, restlessness by day and insomnia at

night, delirium, deafness, paralysis, and convulsions.

The headache is most often frontal or temporal if the underlying cause be acute renal trouble; most often occipital if chronic—as cirrhosis or granular contracting kidney. Headache is perhaps the most constant of all the early symptoms of uræmia, and it is often very distressing. It may be distinguished from ordinary neuralgia by its non-conformance to the evening exacerbations so constant in the latter.

Nausea and vomiting are scarcely less constant symptoms, and when present are often very obstinate and prevent the successful administration of medicine by the stomach. The exaltation of reflex muscular sensibility is observed in the frequent twitchings of certain groups of muscles—most often those of the face. The visual disorder may consist of acute amaurosis—the patient becoming suddenly deprived of vision; or a more gradual and less complete impairment of vision may come on which is most likely to become permanent. The first form is more common in acute renal disease; while the second form is more common in chronic forms of kidney affections. The acute dyspnoea occurs in two forms—the first closely resembling asthma, and the second due to pulmonary oedema and characterized by rapid respiration, 40 per minute or more. A third form of respiratory disorder of not infrequent occurrence is Cheyne Stokes respiration—which should not be confounded with the more regular and uniform slowing down of the respiration due to large doses of opium.

Restlessness is often very marked and not unlike the condition preceding delirium tremens, save that the apprehensiveness of danger so marked in the latter is absent. The delirium—or mental intoxication—when present is peculiar in certain respects. Upon fixing the attention of the patient closely he is usually quite rational, and replies to questions intelligently; but he is usually very forgetful—often repeating a question he has just asked and received a reply to.

Insomnia is a prominent feature of the uræmic state; “these patients rarely sleep well” save under the influence of a narcotic.

Paralysis is most common in the muscles of the face—usually of one side—and often involving the tongue. It often extends to the arm and leg. Impairment of sensibility in the affected part is rarely complete even when the motor power is entirely abolished. The attack often lasts less than an hour and rarely does it continue longer than twenty-four hours.

Let it now be supposed that the physician is called to see a case of typical uræmic coma, in which state the patient has been accidentally discovered and a hasty diagnosis is demanded. The appearance of the patient is somewhat pallid. This pallor is not the result of weakness of the circulatory forces as in syncope, but is rather due to some underlying renal disease. It is therefore an unhealthy, partly cachectic pallor—familiar to those who see much of kidney disease. Exceptions to this rule (the appearance of pallor) occur chiefly in cases of early cirrhosis of the kidney when the color of the skin may not depart in the least from the usual tint of robust and perfect health.

Apparently the patient is profoundly insensible; in reality he is rarely completely so in pure uræmia. Upon vigorously shaking the patient, or shouting in his ear, indications are observable that consciousness is not entirely abolished. He may indeed very often be made to speak, or to reply to questions asked in a loud voice—though usually in monosyllables. If unable to do this there will at least be observable upon close inspection some expression of countenance indicative of perception, if not of comprehension.

Reflex sensibility of the voluntary muscles is still present and may be excited by percussion.

The pupils are somewhat dilated and the orbicularis responds to stimulants.

The breathing is often stertorous, but not deep and guttural—the noise being made by the cheeks and lips not by the throat. The pulse is increased in frequency—90 to 120 per minute—is rather full, often hard and tense. The temperature is raised, marking 100° to 102° F. Oedema may or may not be present; if present it is more prominent about the malleoli and eyelids.

If the urine be drawn—and it always should be in doubtful cases—it will usually be found highly colored, and to contain albumin. The odor of the breath is characteristic—uræmic.

Such are the more trustworthy symptoms of uræmic coma, and they are essentially different from those of most other states of insensibility as will be presently seen.

If to these we are enabled to add the history of the case, we shall have many of the premonitory symptoms already considered as additional guides.

The condition most commonly confounded with uræmic coma is hæmorrhagic apoplexy: and since it is often the outgrowth of the same underlying cause as uræmia—vaso-renal change—it should receive most careful consideration.

In recent typical apoplexy the insensibility if present at all is usually complete—it being impossible to arouse the patient or to elicit evidences of perception or comprehension. This state may be reached gradually the same as in uræmia, though usually much more rapidly. The pupils may be contracted or dilated, and in this respect they are exceedingly variable. Inequality of the pupils—most common—is the more trustworthy sign. If the hæmorrhage occur in the pons varolii the pupils are contracted. The face may be pale but the general hue of the skin is usually normal. The respirations are increasingly stertorous and guttural in character—the sound being made in the throat as in heavy deep snoring. The pulse is reduced in frequency, sometimes reaching 60 or even 50 beats per minute, and it is “labored.” It is increased in volume and marked by tension. The temperature is usually subnormal, often marking 96° F. Paralysis is usually present of the hemiplegic order. There are rarely true convulsions with apoplexy; the patient may fall and muscular spasms of a clonic order may follow, and even the tongue may be bitten, but it is not deeply lacerated as in epilepsy or in uræmia.

It should be remembered that in apoplexy several of the more important symptoms vary with the stage

of the attack. Thus very early, the consciousness may be preserved and insensibility may come on slowly. After a few hours the clot may and often does excite inflammation, thereby raising both the pulse and the temperature. Perhaps the most constant and valuable diagnostic symptom of apoplexy is hemiplegia. If actual paralysis cannot be made out definitely, a close scrutiny will yet nearly always reveal "one-sided symptoms" of some kind. If the arms be raised, for instance, and then permitted to drop, they do not fall uniformly.

Since apoplexy from cerebral hæmorrhage is confessedly the most difficult of all conditions to differentiate from uræmic coma, it is proper that they now be considered side by side, as it were, in a comparative sense. If the uræmic coma be the result of chronic Bright's disease its history is often identical with that of apoplexy. The patient is beyond middle age and well nourished. The left ventricle of the heart is more or less hypertrophied; indicated by heaving impulse of apex beat; accented second sound of the heart most distinct near and to the right of the sternum in the second interspace; also extended area of cardiac dulness. The arteries are hard—atheromatous—and the pulse is marked by decided increase in tension—well shown by the sphygmograph. Renal changes are almost as common in one case as in the other and, therefore, albuminuria will not form a safe distinguishing guide here. The premonitory symptoms are much alike in each case, viz.: vertigo, visual disorders, epistaxis, drowsiness, pain in the head, and vomiting. Indeed the very time of attack coincides, being most frequent after some unusually active or long continued exercise.

Generally speaking, the age of the patient is of service as an aid in distinguishing doubtful cases. Thus, apoplexy is almost limited to middle and advanced life. Albuminuria in the aged is for the most part due to contracting kidney—cirrhosis—and my own observations have shown me that contracting kidney more often gives rise to convulsions without than with coma.

On the other hand if the patient be under 30 years of age, apoplexy would be improbable, and uræmia would, moreover, be less likely to be overlooked, since it would then as a rule depend upon an acute renal disease, the symptoms of which could scarcely escape observation.

Passing now to a more minute analysis of the chief symptoms of uræmia and apoplexy. It has already been stated that paralysis is the most constant and characteristic indication of apoplectic coma. Its chief features are its completeness, permanency and one-sided character—hemiplegic. It comes on before or with the loss of consciousness, and it lasts through the attack with little or no variation: and if the patient recover it is the last symptom to yield, often in fact becoming permanent. Uræmic paralysis as a rule precedes the coma for some hours or days. It is transient, often lasting but half an hour, rarely longer than twelve to twenty-four hours, and consequently is rarely present *during coma*. While it is one-sided, it is rarely so extensive as in apoplexy—

involving but the face or the face and arm. I have in a few cases seen complete hemiplegia (motor).

The pulse in apoplexy is slowed in the first stage, and usually does not become accelerated for many hours—until inflammation arises. In uræmia the pulse is accelerated from the first, before coma comes on, so that however early we meet with uræmic coma the pulse is increased in frequency—90 to 120. The temperature follows much the same course in each. In apoplexy it is reduced in the first stage. It remains sub-normal for a variable time, always for hours, then it slowly rises, and in two or three days it may reach 100° to 103° F.

In uræmia the temperature rises before coma comes on usually reaching to 100° to 102° F., and fluctuating between these points as the attack continues.

In convulsions due to uræmia the spasms are tonic, general, and usually repeated with more or less increasing frequency. As a rule the convulsions precede, and are several times repeated before the appearance of coma, the latter coming on slowly and gradually, hours usually elapsing before its full development. If unprotected, the tongue is bitten and often badly lacerated.

In apoplexy, as previously stated, true convulsions are rare; when present they are mostly clonic, rarely repeated, and precede the coma, the latter rapidly following the fall. The tongue may be bitten but is not deeply lacerated. In apoplexy the convulsions may be unilateral; in pure uræmia they are never so.

The loss of consciousness in apoplexy is more rapid, more profound, and less variable than in uræmia. An hour or so after the seizure, the patient is often completely comatose in apoplexy; and if he recover consciousness it most always requires several days for its accomplishment. In uræmia unconsciousness creeps on slowly in a fitful, vacillating manner; and even after apparently complete unconsciousness is reached, there may be intervals of more or less consciousness until very late—near death. In uræmic coma I have rarely found complete abolition of perception save very near death, and there is pronounced irritability of the voluntary muscles upon percussion. In typical apoplectic coma abolition of consciousness is usually complete, and, moreover, when established the insensibility continues unchanged until death or general improvement occurs. In apoplexy the respirations at first are as a rule easy and natural. Sooner or later they become deepened, and finally stertor appears of a deep, noisy guttural character. To one in an adjoining room the noise very much resembles loud snoring. In uræmia the respirations at first are also easy and natural. Should œdema of the lungs be present, however, which is not uncommonly the case, the respirations become rapid—40 to 50 per minute. Noisy stertor is rare in pure uræmic coma, and the little noise present is made with the cheeks and lips—a soft puffing noise. Guttural stertor may appear near death; as it often does upon the approach of death from many causes other than uræmic.

If any information of value is to be gained from the pupils, it is mostly in the earlier stages of uræmia and apoplexy. In the former the tendency is to di-

lation of the pupils; sometimes, indeed, they are so widely dilated as to give rise to suspicions of belladonna poisoning. In apoplexy the pupils are very variable. Sometimes one pupil is dilated and the other contracted, or one pupil may be normal and the other one either contracted or dilated. Inequality is the more common feature. It should not be forgotten that on the near approach of death from most causes, the pupils often become widely dilated.

Having now reviewed the chief differential features of uræmic and apoplectic coma, I shall next take up the subject of epilepsy, and note in passing the differential features of its symptoms from those of uræmia. First, as to the history. It will of course be unusual to meet with a first attack of epilepsy, and therefore it will be generally known by the friends that the patient is subject to "fits."

Epilepsy is a disease of the young—75 per cent. of the first attacks occur before 20 years of age. The attacks are most common at night, unlike in both apoplexy and uræmia. The attack is always sudden, a few moments at most constituting the prodromal stage. Convulsions always precede the coma, and they are of the tonic order. Consciousness is completely abolished from the beginning; even before the convulsions begin. The convulsions are rarely repeated the same day, more often several days or weeks elapse before their return. In uræmia, it will be remembered, a few hours at most elapse between the convulsions when repeated. In epilepsy consciousness gradually returns after the convulsive attack, the average period of coma being about one hour, unless the attack occurs at night, when it is much longer. In uræmia unconsciousness does not usually occur until after several attacks of convulsions, and it gradually deepens instead of wearing away after the fits.

The coma following the epileptic convulsions is much like a sound sleep; after the first few minutes, as a rule, the patient can easily be aroused. There is rarely true paralysis and, when present, it is probably due to cerebral hæmorrhage. It is true there is nearly always more or less loss of power after an epileptic convulsion, and in the arms and limbs this may be apparently complete; but it wears away in a few minutes or hours, being a weakness or prostration rather than a paralysis. The coma of epilepsy is most often a confused mental state from which the patient may be easily aroused. There is usually unsteady stertor, "coming and going," guttural in tone, and the unconsciousness varies greatly both in intensity and in duration. In epileptic coma reflexes are not abolished; the pupils are normal, the conjunctiva is sensitive, and the orbicularis responds. The skin is usually bathed in perspiration—at first warm, dusky and purple, but gradually cooling and becoming pale.

The temperature does not vary much from normal; perhaps a rise of half a degree may be noted. If, however, the convulsions be rapidly repeated, the temperature may rise above 100° F.

The pulse in epileptic coma is rather small and feeble, though regular, and it may be slightly increased in frequency. If a tracing be taken with the sphygmograph it shows the features of dicrotism. It

will be seen from the foregoing description that epilepsy does not closely resemble uræmia, save in the convulsive seizures, and these are strikingly similar, except in their frequency of repetition. Practically, it is only those cases of epilepsy in which the convulsions are rapidly repeated, and the coma consequently deep and prolonged, that are likely to be confounded with uræmia. Happily, such attacks are rare, and for the most part due to traumatic causes which rarely escape attention.

We have next to consider the coma depending upon alcoholism, often one of the most difficult conditions to diagnosticate. There are, indeed, few states of unconsciousness with which it may not be confounded. Drunken stupor has even been mistaken for syncope and, strangely enough, the unfortunate patient has been made to swallow brandy for the purpose of reviving him. The coma of drunkenness varies in intensity according to the dose of alcohol taken, and the susceptibility of the patient to its influence. There may be only quiet stupor, from which it is easy to arouse the perceptive and volitional powers of the patient; or all the senses may be abolished, the patient being completely unconscious, stertorous, comatose and anæsthetic.

In typical drunkenness the breath is usually loaded with alcohol, and this is readily recognizable by the odor. It is especially so if the debauch be due to spirits. The odor of alcohol in the breath, while it is a strong presumption of drunkenness, yet must not be absolutely relied upon as the cause of unconsciousness, since epilepsy or apoplexy sometimes supervenes upon a fit of alcoholism.

The respirations are heavy and often stertorous in drunkenness. The stertor, when present, is variable and intermittent. The respirations are deep-drawn and less frequent than normal. The stertor is similar to that of heavy sleep. The expression of countenance is vacant; sometimes the features are suffused and bloated; the lips are livid; the pupils are dilated, and the conjunctiva is much injected.

The pulse is small and rapid, and the heart's action is feeble. The temperature is usually subnormal. The skin is usually covered with cold, clammy perspiration. Vomiting is common, and evidences thereof should be sought for about the mouth or clothing. In some cases it is possible to arouse the patient to some degree of consciousness by shaking or pinching him. He may be made to speak, to give his name and address, and if so it is to be noticed that the articulation is thick, drawing and indistinct. He awakens confusedly and relapses again into apparent sleep. Sometimes, however, the patient becomes irritable upon disturbance and indulges in swearing. This is often the diagnostic sign relied upon by the police patrolman, who seeks to elicit it by sharply striking the sole of the shoe with his baton; an excellent means of exciting reflexes, but an untrustworthy diagnostic of alcoholism, since patients in apoplectic conditions will sometimes resent such disturbance both verbally and muscularly. It has been stated that if the patient be aroused sufficiently to be able to speak, the articulation is thick and indistinct. This indicates a disproportionate action

of alcohol upon different centres of the nervous system, which is often very marked.

Tactile sense and motion are usually in reality more disturbed than is cerebral perception and consciousness. In other words, coordination of muscular action and special sense are more impeded than is cerebration. The patient often reasons so well with himself that he requires to be told that he is drunk, unless he attempts to walk, when difficult coördination of muscular motion teaches him that he is intoxicated. The medulla and spinal cord, therefore, are more deeply anesthetized than is the cerebrum. In certain individuals these features of alcoholism are especially prominent; indeed, in such the intellectual faculties are actually sharpened, even when motor coördination is greatly impaired. In such cases most brilliant reasoning powers are manifested or able speeches delivered even though the subject be unable to stand without support. It will be remembered that, in describing uræmia, it was stated that the uræmic poison tended to a directly opposite action upon the central nervous system, viz.: to stimulate the spinal system and medulla, and to depress the cerebral centres. If, therefore, the patient can be in a measure roused, these distinguishing features should be carefully observed in all doubtful cases.

Dr. von Wedekind has recently brought forward a new test of drunkenness for which he claims "infallibility." "By simply pressing on the supraorbital notches with a steadily increasing force you may, with certainty of success, bring an unconscious alcoholic to his senses, and thus differentiate on the spot between alcoholic and other comas." Incredible as this may at first sight seem, Dr. von Wedekind has brought forward a record of 137 cases of alcoholic coma gathered from the ambulance service in which his test has been applied, and in the nine cases of failure of the test out of the whole 137, each one was accounted for by subsequent discovery of some additional cause of the coma.

From what has been already stated as to the action of alcohol upon the central nervous system, it would be expected that convulsions would be rare from this cause, and such in fact is the case. A single convulsion does sometimes occur during, or more frequently preceding alcoholic coma, but rarely are convulsions repeated in pure alcoholism as in epilepsy or in uræmia.

It seems necessary, in passing, only to mention the possibility of confounding syncope or hysteria with uræmic coma. These affections are so familiar to those in general practice, and the symptoms are so well known, that they are not likely to be mistaken for any of the states already considered. In syncope especially the unconsciousness is so brief, and the return to consciousness is so complete, that nature soon reveals the diagnosis; while in hysteria the symptoms, though exceedingly variable, yet possess a general definiteness familiar to all. It remains, therefore, but to consider the subject of poisoning as contrasted with uræmic coma. Although various narcotics produce a state of insensibility and coma,

as well as death in large doses, the effects of opium alone will be considered here, since it is the narcotic for the most part selected for destructive purposes, as well as the one, from its wide range of use, which most commonly gives rise to accidents.

The physiological action of opium and its preparations upon the human organism in medicinal doses is well known. It is only with the larger doses—approaching lethal—that we now have to do; since it is only the deep narcotism induced by decided doses that constitutes the coma likely to be confounded with uræmia.

In coma due to opium the patient may be aroused sometimes to a greater or less extent, but quickly lapses into stupor. In late stages it is difficult, if not impossible, to rouse the patient. The pupils are minutely contracted and insensible to stimulation. The respirations become slower and more shallow; generally feeble, and sometimes stertorous. They may become reduced to 10 per minute or under. The frequency of the respirations is perhaps the best gauge of danger, since in most cases of death from opium the direct cause is asphyxia from paralysis of the respiratory centres. The odor of opium is usually present in the breath. The pulse is slow and feeble; the face is shrunken, pallid, cyanosed, and the expression is ghastly. The eyes are heavy and the lips are livid. The skin is warm and moist with perspiration, and often intensely itching, especially about the nose.

In differentiating the coma of opium from that due to other causes, the special features to be noted are, first, the contracted state of the pupils. This is almost pathognomonic, and is only absent at the approach of death. Hemorrhage into the pons Varoli, as first pointed out by Wilks, induces a similar contraction of the pupils; but this is almost the sole morbid state that produces the uniform and extreme contraction of the pupils similar to opium narcotism. Second, the slowing down of the respirations is almost characteristic of opium coma. It is to be borne in mind that, in the early stage of opium narcosis, the respirations are rather hastened; eventually, however, if the dose be large, the respirations become decidedly less frequent. Cheyne-Stokes' respiration, which is very common in uræmic states, should not be mistaken for retarded respirations due to opium. The distinction is easy, and it is only necessary to mention the possibility of mistake to guard against it.

Convulsions are rare from opium. In many of the lower animals the action of opium constantly tends to produce convulsions, but in man this result is chiefly confined to children. The history is important mostly in an exclusive way—the symptoms of the states already considered, as a rule, being absent. Aside from this, opium poisoning is most frequent in the young.

It should be borne in mind that, in the consideration of the various states of unconsciousness described in this paper, the aim has been to depict the more trustworthy features of typical cases. Variations from these types are to be met with, even in uncomplicated cases, which tax the skill of the most acute diagnostician.

DIFFERENTIAL TABLE.

	URÆMIC COMA.	APOPLEXY.	EPILEPSY.	ALCOHOLISM.	OPIMUM COMA.
Age.....	Most common in the young.	Almost confined to middle and advanced life.	Most common under 30 years of age.	Common at all ages.	Most common in the young.
History....	Previous attacks rare. Bright's disease present.	Previous attacks rare. Heredity marked; granular kidney common.	Previous attacks the usual feature.	Previous attacks common.	May be habit or accident.
Appearance	Pallid, cachectic.	Normal.	Dusky, purple, gradually becoming pale.	Features suffused, bloated, lips livid, expression vacant.	Features shrunken, pallid, cyanotic, expression ghastly.
Pulse.....	Increased 90 to 120 per minute.	Slowed: 60 per minute; full.	Slightly increased, small, feeble, and dicrotic.	Increased, feeble, small.	Usually slowed, feeble.
Tempera- ture.	Increased from beginning 100° to 102° F.	Lowered: 96° F. or lower.	Increased slightly: 99° F.	Lowered somewhat.	Somewhat lowered.
Pupils.....	Tend to dilate.	Unequal.	Normal.	Dilated.	Contracted.
Respirations	May be hastened or not; stertor labial.	Slow, stertorous, guttural.	Stertorous, guttural, unsteady.	Deep, slow, stertor intermittent.	Slow, shallow, feeble.
Special Features.	Unconsciousness not complete; peculiar odor of breath; convulsions recurring; frequent pulse; temperature increased; albuminuria.	Slow pulse; complete insensibility; unequal pupils; hemiplegia; guttural stertor.	History of former attacks; unconsciousness not complete; coma of brief duration; great muscular relaxation.	Alcoholic breath; vomiting present; injected conjunctiva; swollen features; supra-orbital pressure rouses the patient.	Contracted pupils, opium breath, slow respirations; cyanosis; expression ghastly.

It should likewise be remembered that two, or even three of the causes considered may combine to produce a given state of insensibility, thus bringing about considerable confusion of the symptoms. Thus, a patient the subject of granular kidney—interstitial nephritis—may take a dose of opium, the tendency of which will be to suppress the urine, and uræmia may be the result. Furthermore, repeated uræmic convulsions may induce cerebral hemorrhage, since all the conditions are favorable to such result in patients with granular kidneys. In such a case we have the symptoms of apoplexy added to those of uræmia, which latter, in turn, arose from the effects upon the kidneys of the opium. Again, the ingestion of a large dose of alcohol may precipitate an attack of convulsions in an epileptic subject, and in turn the convulsion may lead to cerebral hemorrhage. The possibility of mixed cases should therefore be kept in mind. Happily, such cases are comparatively uncommon, but when they do occur they are only to be detected by careful study of the leading symptoms of each stage of the attack, since one cause usually supervenes upon another, rather than all occurring simultaneously.

In conclusion, it is hoped that the appended differential table may aid the diagnostician by presenting at a glance the leading features of each of the composite states considered in this paper.

163 State St., February 27, 1888.

GUNSHOT WOUNDS OF THE ABDOMEN.

Read before the Chicago Pathological Society Feb. 13, 1888.

BY J. B. MURPHY, M.D.,

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Case 1.—H. M., age 26, admitted to the hospital at 8 P.M., June 16, 1886, suffering from a bullet wound of abdomen. I saw him at 10 P.M. He was

suffering but little from shock; pulse 90; temperature normal; no pain. On examination, I found a large bullet wound half an inch below umbilicus, and an inch to the right of median line. I decided to make laparotomy, and assisted by Dr. E. W. Lee, and the House Staff of the Hospital, I made the median incision three and one-half inches long. I began by examining the small intestine and repairing each wound as it was exposed by first pairing off the ragged edges with a scissors, then inserting a continuous catgut suture in the mucous membrane, then in the peritoneal covering, the first row of sutures being entirely covered by the second. This was continued until the eleven openings were united. I found that the bullet had passed through the posterior peritoneal wall close to the pelvis of left kidney; cleansed the peritoneal cavity with a warm $\frac{1}{2}$ per cent. carbolic water, united the abdominal peritoneum behind with catgut, also the opening made in the anterior peritoneal wall by the bullet, sewed the peritoneum at the incision with a continuous catgut suture, the muscular wall with deep silk suture (interrupted), dressed the parts with iodoform gauze, then carbolized gauze and borated cotton. Operation lasted two hours; patient's condition good after the operation was completed; pulse 110, and of good volume.

The following morning the House Surgeon reports: "No vomiting, patient slept the greater part of the night, did not complain of pain; pulse 110; temperature 99½° F.; no thirst or tympanites. At 7 P.M. pulse 96; temperature 99° F. No vomiting and no pain; says he is hungry." I called at the hospital the following morning and found that the patient had died suddenly at 7:30 A.M., after spending a quiet and painless night. At 6 A.M. he complained of weakness and said he was fainting.

Autopsy.—Found heart and lungs normal; abdomen filled with blood. The suture in post-peritoneal wall torn through, a large quantity of blood in

the retro-peritoneal region, an opening in the left renal artery from which the hæmorrhage came.

The wounds in the intestines were *all completely united, being both air and water tight*; in the majority of these the catgut could not be seen on account of the deposit of reparative material placed about them. No evidence of impending gangrene. Though the patient only lived thirty-six hours after the operation, the peritoneum had already restored itself, and made the openings impervious. No evidence of beginning peritonitis. Cause of death hæmorrhage from renal artery.

Case 2.—G. J., colored, aged 22, admitted to hospital May 24, 1887. Said he was shot in the abdomen about two hours previous.

On examination, a bullet wound two inches to right of median line and an inch above umbilicus was found; dullness in the lower portion of abdomen. Pulse 66, of good volume; some shock. I decided on an exploratory incision; found the abdomen full of blood; the bullet passed from the abdominal wall into the margin of the liver, passing through its substance almost directly backwards and into the muscles of the back. The hole in the posterior surface of the liver could be felt by passing the hand around the liver. There were no perforations of either stomach or bowels. The abdomen was cleansed, about two pints of blood and clots removed; the hæmorrhage had ceased. The opening made by the bullet in the abdominal wall was closed with catgut suture from the inside, abdominal peritoneum united with catgut suture, and the muscular wall and skin with silk. Dressed antiseptically. Operation lasted thirty minutes. Patient in good condition.

May 25. Slight tendency to vomit during the night and some pain, but feels well this morning. The patient's temperature did not reach 99° from that time on, nor did he have a single untoward symptom until June 3, when he complained of pain in the back, and on examination a small swelling just over the supposed position of the bullet was found. He was anaesthetized and the bullet removed, also a small quantity of pus. Convalescence was rapid and patient was discharged June 13.

Case 3.—Geo. S., colored, aged 57, musician (but more of a drunkard) by occupation, admitted to hospital August 23, 1887, at 3 P.M. Was shot with a 38 calibre bullet a few hours before, his assailant standing fifteen feet in front and a little to the right. The bullet entered on a level with the 9th rib, one and one-half inches in front of the axillary line. Urine contained no blood. Pulse 78, full and strong; no shock; wound had been probed before patient came to hospital.

Three hours after the injury patient was anaesthetized, and an incision was made three inches long downwards and inwards from the point of entrance of the bullet towards the umbilicus. The bullet was found to have passed through the liver three-fourths of an inch from its lower margin; also perforating the transverse colon on its convex portion about one-half inch from its beginning, leaving a bridge of intestinal tissue half an inch in length between the

point of entrance and exit, then passing into the muscles of the back an inch to the right of the spine.

The bridge of intestine between the two openings was cut through, the edges of the wounds freshened, making an opening about one and one-half inches in length. The mucous and muscular layers were first united with a continuous catgut suture; the peritoneal covering was then sewed over it with a continuous catgut suture; about half a drachm of fecal matter escaped from the intestine after the opening was enlarged, but none before. Abdomen cleansed with boric acid solution, and blood-clots removed. Parietal peritoneum united with continuous catgut suture. Muscular and continuous tissue united with interrupted silk suture. Dressed antiseptically. Operation lasted about three-fourths of an hour. Patient came from the operating table in good condition; pulse 90, and of good quality. 7:30 P.M., pulse 78; patient vomited considerable in the afternoon; some pain in the wound.

August 24. 8 A.M., pulse 72; temperature 99°; slept considerable; ordered $\frac{1}{2}$ ounce doses of brandy every two hours with carbonated water. 7 P.M., pulse 76; temperature 100.2°; vomited up to 4 P.M., but not since; feels hungry and thirsty.

August 25. A.M., pulse 74; temperature 98.5°; slept well; no vomiting. From this time on the patient made a rapid recovery. The first dressing was removed September 2; complete primary union. Sutures taken out and wound redressed. Patient discharged cured September 16. Have seen the patient since, and he is feeling as well as he ever did.

Case 4.—J. H., aged 26, was admitted to Cook County Hospital on December 1, 1887, at 8:30 A.M., for gunshot wound of abdomen. On examination a wound was discovered on the right side nearly in the axillary line, and just below the costal cartilages, apparently penetrating down and in. The edges of the orifice were blackened and powder-stained, and another opening on the left side midway between the costal cartilages and the level of the umbilicus, was found. The patient was suffering profoundly from shock.

Under ether, and after the patient had walked two miles, the wound on the right side was enlarged, when it was found that the bullet had entered the peritoneal cavity, notching the anterior margin of the liver in its downward course. The usual median incision was made, revealing two wounds in the stomach with extravasation of food into the abdomen (small quantity), and one in the mesentery; some bleeding from the latter. These were all carefully sewed up with deep and superficial catgut sutures. The intestines were drawn out and enveloped in warm towels. No wounds were found in them. The peritoneal cavity was thoroughly washed out with warm solutions of boric acid, and the incisions sewed up with silk after securing the peritoneum with catgut. A rubber drain was passed through the wound on the right side and brought out on the back above the crest of the ilium. Operation lasted 70 minutes; patient very much collapsed.

Through an error the patient was given two hypodermic injections of one third grain of morphia, and

he showed severe symptoms of opium poisoning, and did not become conscious until 6 P.M., some eight hours after the operation. The pulse became rapid and more feeble. At 9 P.M. the patient became delirious and died at 11.30 P.M. There is no doubt that the opium contributed somewhat to the unfavorable outcome in this case; also the prolonged operation. Autopsy showed the abdomen clean and no blood in it.

REMARKS.—There are no positive symptoms of perforation of the stomach or bowels, *i.e.*, if we do not consider the mere fact that a bullet passed through the abdominal cavity *per se* a positive symptom of perforation of the viscera or one of the large vessels. And that we should so consider it is proved by the results of Dr. Parkes' experiments in 38 bullet wounds of the abdomen in dogs, in which only two escaped injury of the stomach and bowels, and in one of those there was considerable hemorrhage, making only about 2.5 per cent in which the viscera escaped. Is there any other sign in surgery upon which we act and consider it pathognomonic where a greater percentage of the cases conform with the law? None that I know of. With this fact staring us in the face, is it not the height of presumption for us to hope that the viscera are not injured after a bullet has traversed the abdomen? Indeed, the symptoms of shock were only slight, except in two cases, and in one of them it was due to hemorrhage.

In *Case 4* there was no vomiting of blood to indicate a wound of the stomach. At the International Medical Congress it was suggested by the first speaker on that subject "that no operation should be performed until such time as fecal matter appeared at the external wound." This, of course, is absurd, for the food of fecal material does not escape from the bowel at once after the injury, but it is principally on manipulation that we get an immediate escape, *i.e.*, a primary escape of the contents of the alimentary canal. Nature prevents this escape by an ectropion of the mucous and muscular coats plugging up the openings temporarily. Dr. Gross states that "extravasation takes place in all cases," but he does not mention the period of time that elapses before it takes place. This is true of the stomach as well as of the bowels, as in *Case 4* not more than a drachm of fluid and food escaped, notwithstanding the stomach contained a large quantity of food, the two openings would each admit the index finger, and the patient was about for eight hours after the shooting.

In Dr. Parkes' experiments fecal matter did not appear at the external opening in a single case. This temporary plugging of the opening by the mucous membrane accounts for the tardy appearance of peritonitis in some of the cases of perforating wounds. When shall we operate and when not? There are many interesting cases reported of perforating wounds of the abdomen where the patients recover without operation.

Hennen reports a case shot through the abdomen with a ramrod at Badajos, 1812. In the late rebellion Private Manypenny, as his surgeon records it, "had a ramrod driven plump through his guts." In the Franco-Prussian war, five cases of recovery are

reported in one corps, but I cannot find any report of the number of deaths. Larrey, in a long experience, reports only one case of penetrating wound without immediate serious results, and afterwards the bowels were found to be contused. These few remarkable cases are threadbare from being quoted. Abernethy used to shake his head when he had a case of this kind and say, "Nature will have nothing to do with wounds of the small intestines." Bell says, "We announce them as fatal." Sir William McCormac says that in cases of perforation the median incision should be made as for any other laparotomy, and the bowels examined; but he says, "if a portion of the bowel protrudes from the opening and is not wounded, it should be returned and the opening sewed up." He goes just half way in the right direction and then falters. How can Sir William McCormac tell but that the bowel may be wounded three or six inches from the point of entrance of the bullet? Not any more than he can tell from the examination of the external wound how many perforations there are in the bowels, and that it would be absurd for a man to attempt the latter is thoroughly demonstrated by the excellent and well-known experiments of Dr. Charles T. Parkes on dogs. He has opened up the field in a most thorough manner, and demonstrated to us what can be expected from a bullet passing into the abdomen. *If we will not act it is our fault. Ostrich-like, shall we stick our heads in the sand?*

The light that has been thrown on the subject from numerous experiments, and the results following the treatment of cases influenced thereby, puts us in a position where we cannot escape the responsibility from the charge of malpractice, when we stand idly by and allow our patient to sink from a septic peritonitis or bleed to death from a wounded vessel. We, as scientific men, should act fearlessly, and having done so we have the consciousness of having fulfilled our whole duty.

All the preparations should be as thoroughly antiseptic as for laparotomies for other diseases, *i.e.*, the disinfection of hands, instruments, etc.

The first incision should be to enlarge the opening made by the entrance of the bullet down to the parietal peritoneum, to be sure that the ball entered the abdominal cavity, and that it did not rest on the peritoneum, as it did in a case of mine. The second incision should be, in the majority of cases, made in the median line, as it allows of a greater latitude for the examination of the organs; but in some cases it will be impossible to bring the wounded bowel to the opening in the median line. When the wound is outside of the mammary line the incision should be over the entrance of the bullet, and enlarged from that point as may be deemed best,—that is, in large, broad-bodied men. In all of my experiments upon the cadaver I was able to reach the wounded bowel in the most remote parts of the abdomen from the median incision. The examination of the organs should be methodical and rapid, beginning with the cæcum and examining the small intestines upwards, being careful to keep the bowels as near their normal position as possible, and not expose them to the

air, repairing each opening as it appears. If the exit opening in the peritoneum can be found, sew it with silk to prevent a return of pus into the abdominal cavity, should any form in the tract or around the bullet. The number of openings in the bowels may vary greatly, and too great care cannot be exercised to make certain that none escaped notice and remain open, causing a fatal outcome.

Should the mesentery or omentum be wounded great care must be exercised in ligating the vessels around the opening by suturing the proximal side of the mesentery with catgut, using a full curved round needle (Czerny), also removing all blood-clots found between both layers of peritoneum in the mesentery.

Another important point is to look for hemorrhage in the retro-peritoneal cellular tissue where the ball makes its exit from the peritoneal cavity. Should there be oozing from this opening it should be enlarged and the vessels closely examined, and if injured or oozing ligate them. Had I done this in my first case, I am quite sure the fatal hemorrhage would have been avoided. I may also mention a case in the hands of one of my colleagues where fatal hemorrhage occurred from a vein in the retro-peritoneal cellular tissue in the neighborhood of the left kidney. The patient died of exsanguination on the third day. Autopsy showed the source of the hemorrhage; also that the patient had no peritonitis.

The suture to be used is one that (1) can be easily and rapidly inserted; (2) that will keep the serous surfaces in position for forty-eight hours without causing a pressure atrophy; (3) that no suture that is exposed on the peritoneal side of the bowel shall pass through to the mucous surface; (4) that there shall be as little tension on the suture in the peritoneal layer as possible; (5) they shall be aseptic; (6) they shall diminish the calibre of the bowel as little as possible; (7) serosa shall come in contact with serosa.

The materials that at once suggest themselves to fill all the requirements are chromated and juniper catgut, softened in carbolized water and sublimated silk (1:1000). I used carbolized catgut in my cases, but since that time the reports of Professor Theodore Kocher's experiments and operations in Berne, have convinced me that catgut prepared in carbolized oil or alcoholic solutions of the same are not reliable and frequently septic. The details of the same can be found in the *Correspondenz-Blatt für Schweizer Aerzte*, and are well worth perusal. The best mode of insertion to supply the above mentioned requirements are (a) in longitudinal and small transverse wounds, a double row of continuous sutures with a round (Czerny) needle, the first approximating the mucosa, and the second the serosa, the latter covering the first from sight; (b) in large transverse wounds the Lembert suture should be used. The first can be inserted very rapidly, and the tension on the serosa is lessened by the approximation of the mucosa; it will remain unaltered forty-eight hours and not cause pressure atrophy, and the serosa unites in from twenty-four to thirty-six hours, as shown by experiments on animals, and in my first case. The continuous suture exposed on the serous surface is not

exposed on the mucous surface, as in Jobert's suture, but it would diminish the calibre of the bowel in transverse wounds, and for that reason, and that only, is Lembert's suture used in large transverse wounds.

A portion of the bowel must be excised when more than three-fifths of its calibre is destroyed, otherwise there will be a stricture at that point. This can readily be accomplished by invagination with a rubber supporter in the intussusceptum, as suggested by Dr. N. Senn, and a continuous suture approximating the serosa in its entire circumference. This may be further supported by the plastic operation on the omentum to support the bowel in this position and insure adhesions (Dr. Senn). When there are two large openings which can be approximated and leave a fistula, allowing the contents of the bowel to pass through the fistula and the loop of bowel to be retired (if the loop is short, that is, less than four feet in animals), the openings should be approximated by Dr. Senn's bone-tablets, or by the suturing process suggested by one of the surgeons in the late Rebellion. Dr. Reybard's wood-plates may be used and the opening approximated to the abdominal parietes. The danger when the bone- and wood-plates are used is that they cause pressure atrophy. These advantages are (1) the rapidity with which they can be inserted, Dr. Senn claiming that he can close the opening in ten minutes; (2) the certainty with which they approximate the serous surfaces and retain them in their position.

Toilet.—Remove the blood-clots and escaped contents of the viscera with a sponge; wash out the abdomen with a solution of boric acid until such time as it returns clean from the external wound; replace the bowel as near the normal position as possible, and spread the omentum over the bowel. If you fear there is still remaining foreign matter, it would be better to put in a Mikulicz drainage than to lose much time in trying to cleanse the abdomen and producing a great degree of shock from which the patient cannot rally. *Above all things avoid profound shock.*

THE EFFECT OF OPIUM ON THE UNBORN CHILD.

BY C. E. RUTH, M.D.,
OF MUSCATINE, IOWA.

Opium is at once one of the oldest and most useful of drugs, as well as one of the most potent agencies for harm. Its well-known capacity for relieving pain of almost every variety and grade of severity has resulted in its almost unrestricted use where the relief of pain is a prominent indication in the treatment of disease. Its property of relaxing both voluntary and involuntary muscular fibres, as well as the relief from pain, has resulted in its employment very largely in threatened premature deliveries.

But there are at times contra-indications to its use and limitations in its utility, especially its remote effects. These we too frequently lose sight of or disregard. Authorities lay great stress upon care in the administration of opium to *very young* children, but

where can be found anything in regard to its effects on the *unborn child* when administered to the mother? We are told that $\frac{1}{100}$ of a grain of opium has produced convulsions in children, and death by convulsions has been produced by very minute doses; also that the very young child is proportionately much more susceptible to the action of opium than the adult; but is this susceptibility just developed at birth or does it exist before? I think it exists before birth, and that it is as strongly marked as it is after delivery; and in the absence of the slightest evidence to the contrary will proceed to furnish the evidence for my views, which are based on evidence elicited from observation of the effect upon the unborn child of the administration of large doses of opium to pregnant women for painful neuralgic affections, including gastralgia, and in threatened premature labor. The question would be immediately asked, what evidence could you obtain of any effect upon the unborn child? We are told that opium produces convulsions and death by convulsions in young children; then, may not the unborn child have convulsions when we overload the blood circulating to its unstable nervous system with a poison whose characteristic effect, in but a few hours at least, in case birth should take place, is conceded to be the production of convulsions?

In case convulsions do occur *in utero*, have we any possible way of determining the fact? Given a case of advanced pregnancy in which the physician is administering large doses of an opiate to the mother, and she begins to complain of tremendously violent motions of the child, such as she never knew before, and the physician, by placing his hand on the abdomen, detects motions of the child apparently many times more violent than usual, and so severe as to cause the mother to scream aloud in agony and say the movements are unbearable—this is repeated in numerous cases, and he then remembers the characteristic effect of the drug on young children; then he finds that these powerful motions in each case accompany the full effect on the mother of the administration of large doses of opium; it seems to me we are very slow in reasoning from cause to effect if we do not come pretty soon to some opinion in regard to their relation. Do we get a sufficient amount of opium into the mother's circulation in administering full medical doses to her to send a proportion large enough to the child to produce an effect on the child *in utero* that $\frac{1}{100}$ of a grain has been known to produce on the child soon after delivery, provided they are equally susceptible in the two states? Estimating the weight of the mother at 120 lbs., and the child at 6 lbs., we have the child near birth representing about $\frac{1}{20}$ of the weight, and if we give opii gr. iv, at once or in divided doses near together, we have $\frac{1}{2}$ gr. of opium for the child's proportion of the gr. iv. If $\frac{1}{100}$ of a grain may produce convulsions in a young child after birth, may we not justly conclude that $\frac{1}{2}$ of a grain is very liable to produce the same result in the unborn child, especially when it is substantiated by such evidence as previously mentioned?

If the child receives through the mother a much larger quantity than we would think of giving it after

birth, should we not carefully consider the possibility of producing convulsions and death in the unborn babe by administering anything like full doses of an opiate to the mother? The proportion of opium which is the child's share being so large, of course we must conclude that unborn children are daily getting poisonous doses of opium. In the prevention of abortion most authorities recommend opium as the sheet-anchor, but those of us who have used it for that purpose know too well how seldom it has given satisfaction in preventing premature delivery.

Let us consider for a moment, in each threatened abortion case, the possibility of producing the death of the foetus, and certain abortion following the use of the very remedy we are using to prevent the same. We certainly have no reason to believe that the increased susceptibility of the child to the action of opium is just developed at birth; but, on the contrary, have good reason for believing that it is still more strongly marked in early pregnancy, when we know that the number of abortions occurring during the administration of opium for their prevention is very great. In my practice the number of abortions occurring during its administration is as great as with rest in the recumbent position with the hips elevated, etc., without the use of opium.

I conclude that opium will not prevent abortion; that it may be and probably often is an important factor in aiding or rendering more certain the completion of an already threatened abortion by causing convulsions in or death of the child.

When opium is administered to the mother for other painful affections, when there is no threatened premature delivery, is the death of the foetus as frequent as the sized dose would lead us to suppose? Bartholow says that opium causes death through paralysis of the muscles of respiration, thereby depriving the patient of the amount of oxygen necessary to sustain life, and sometimes, he says, death is caused by paralysis of the heart. Anyone can at once see that death by paralysis of the heart is the only one of these methods applicable to the unborn child, and that for that reason alone death *in utero* does not occur more frequently than it does from administration of opium to the mother; for as long as the mother, who is least susceptible to its action, still continues to breathe, oxygen will be supplied to the child if its heart still continues to beat. The heart of the foetus has not the resistance to overcome in the lungs, by want of oxygenation of the blood, which the child has after birth. This, then, will account for the small number of deaths from administering opium to pregnant women when labor is not threatened or in progress, and will also account for the relaxed condition and feeble hold upon life that children have when born while the mother is considerably under the influence of an opiate. For, the moment a child is born, whose blood is already charged with opium, so soon do the influences of paralysis of the muscles of respiration manifest themselves, rendering the respiratory efforts feeble or entirely absent, and greatly lessening the child's chances for an independent existence.

December 12, 1887.

CYSTIC KIDNEY AND OVARIAN CYST IN THE SAME INDIVIDUAL. OVIARTOTOMY AND RECOVERY.

BY THOMAS W. KAY, M.D.,

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Répeka, a virgin, 15 years of age, of Armenian parentage, was brought to me, July 8, 1887, from Adana, with the following history: From the first appearance of her menses till five months previous to her visit to me, the menstruation had been free and regular, and with but little discomfort. At that time she was confined to her bed with neuralgic pain in the right ovarian region. After several days of a scanty flow of menses the pain left, but returned with the menses, after forty days, at which time she noticed a swelling in the right inguinal region, which was only slightly less in size than at present. Since then her menses have been very irregular and scant, and the pain which is present, more or less, all the time is greatly increased at the menstrual period, radiating from the swelling over the whole abdomen. Three months ago she was aspirated by a physician and nearly two tumblerfuls of watery fluid drawn off. The fluid did not change its color, and gave no precipitate on boiling. The aspiration diminished the size of the tumor, but only for a few days.

On examination I found an uneven, slightly flattened, oblong tumor, as large as two fists, situated in the right inguinal region. It gave no sense of fluctuation and was very slightly movable. A small scar over it showed the point where the aspirator needle had been inserted. By vaginal examination the uterus was found of natural size, freely movable, and occupying a normal position. The left ovary was not enlarged, but the right one could not be distinctly made out from the vagina.

Though there were serious doubts about the case being an ovarian tumor, I decided to perform laparotomy and be prepared for ovariectomy if necessary. After several days of preparatory treatment, I operated under all antiseptic precautions, except the spray. On opening the abdominal cavity I found symptoms of a previous peritonitis, the omentum being adherent to the intestines in many places. The slightly movable tumor was covered by the intestines, and proved to be the right kidney, enlarged and displaced. It was probably cystic, but that could not be clearly made out, the intestines and mesentery being adherent to its anterior surface. It had undoubtedly been aspirated, which was probably the cause of the peritonitis. Below this was found a cystic ovary as large as an apple, to which the end of the Fallopian tube was bound down by inflammatory material. One cyst was as large as a hen's egg, and there were several smaller ones. The left ovary was normal in size and of healthy appearance. After applying a double ligature the ovary, with the end of the tube, was removed and the abdominal wound closed, being then dressed with iodoform and antiseptic cotton. The girl made an uninterrupted recovery, and in three weeks left the hospital to make a pilgrimage to Jerusalem. One month later she came to see me on her way to Adana and reported that she was entirely well, having had her menses without any pain.

This I believe is the first ovariectomy that has been performed in Palestine or Syria.

Ovarian tumors among Eastern women are very rare, this being the only one that has come under my notice during a five years' residence.

MEDICAL PROGRESS.

THE USE OF THE VAGINAL TAMPON IN THE TREATMENT OF CERTAIN EFFECTS FOLLOWING PELVIC INFLAMMATIONS.—In an article on this subject, read before the Alumni Association of the Woman's Hospital of New York, DR. T. A. EMMET says:

Under what conditions are we likely to obtain the best results from the use of the hot-water vaginal injections, and when might we expect a good result from the uniform pressure which will be exerted by properly tamponing the vagina? No other mode of treatment yet known can accomplish so much as is gained by the use of the hot-water vaginal injections in all acute pelvic inflammations. The hot water acts as a poultice in exciting contraction of the arterial capillaries. Its continued use can diminish the circulation in the parts with which it is brought in contact, as is done in the hands and arms of a washerwoman while in the exercise of her vocation. Nearly thirty years ago I recognized the fact that the reaction from a continued application of heat was contraction in the muscular coats of the arteries, and hence its application and value in lessening the supply of blood going to the seat of an acute inflammation. The use of the hot-water injection is invaluable in the treatment of all stages of inflammation involving the cellular or connective tissues of the pelvis, in lymphangitis, in phlebitis, and in the early stages of pelvic peritonitis. On the other hand, the vaginal tampon, in my experience, has only been beneficial after all acute symptoms have subsided. If this one feature is not recognized as a cardinal point, the indiscriminate use of this means of treatment will always be attended by unsatisfactory results, and with much unnecessary suffering to the patient.

The only class of cases in the treatment of which I have derived any special benefit from the use of the vaginal tampon has been where I have supposed the blood-vessels had degenerated into a varicose condition, and where this state of the veins has been brought about, as I have shown, from the effects of local peritonitis with adhesions, from the loss of the connective tissue, and from injury where the fascia has been involved.

Let us now consider the use of the tampon in the condition I have described as being the one fitted for its action. I have laid down the rule that its use can accomplish no good, but may do much harm, so long as any inflammatory symptoms can be detected. We must trust to the use of the thermometer to show the absence of an elevated temperature in the pelvis, and to the want of other symptoms indicative of existing inflammation. In the absence of other symptoms we must exclude to a great extent the presence of pain

on pressure as an evidence of active inflammation, its chief value then being but an indication of the manner in which the tampon should be applied.

Where adhesions have formed and the natural elasticity of the tissues has been impaired, the introduction of the speculum, or pressure made with the finger at certain points, must give rise to more or less pain. Traction is thus made through the connective tissue on the peritoneum and along some shortened line of adhesion. But we are to be all the more careful when pain does exist under these circumstances, through fear of setting up a fresh attack of peritonitis. The most important point that we have to consider is to ascertain, if possible, the *modus operandi* of the tampon, for only by the possession of this knowledge can we determine upon the fit subjects for its application. Experience certainly teaches that by the use of hot-water vaginal injections contraction of the arteries is excited, and that these injections are most useful in active inflammation. By the same means we have ascertained that the tampon does positive harm when not indicated, acting as a source of irritation so long as any acute inflammation exists; it does not lessen circulation through the arteries, as their coats are not sufficiently compressible.

We therefore can draw but one conclusion, and in doing so we reach the point that the tampon acts mechanically, by compressing the dilated veins and by lifting the uterus to its natural position in the pelvis, so that the circulation between the arteries and the veins may be equalized. If the floor of the pelvis has been injured in childbirth, one or both agents may have to be employed to prepare the woman for the needed surgical operation. And it is only by the proper execution of this operation that we can restore the fascia and connective tissue in the pelvis to a state of integrity, and thus indirectly give the necessary support to the vessels.

But we have a different condition to deal with in treating the effects of a local peritonitis. As soon as the adhesions have been separated by the steady pressure of the tampon the pelvic tissues begin to regain their tone. And as the prolapse is corrected by the use of the tampon, and the uterus is steadily maintained in its natural position, the smaller veins are able to regain their natural and tortuous course with the improved condition of the connective tissue. So far in the treatment of a case the use of the tampon is most satisfactory, but as we advance the progress becomes slower. We have at last reached the point where the permanency of our previous success in the treatment of the case must rest upon our being able to effect a radical change in the condition of the degenerated venous diverticula. But it is just in this condition where I believe we gain the chief advantage in the use of the vaginal tampon. We should not, however, be misled by expecting too much, and we must realize that we can only gain permanent good through use of the agent after a long and tedious application, which may extend over the course of months. Moreover, the patient must be, as a rule, favorably situated in a hospital for receiving the treatment, and the operator is only able to do full justice to the patient in proportion to his experience.

I am unable to understand how anything is accomplished unless these diverticula are destroyed through the long, steady, and uniform pressure which is maintained by the tampon when properly applied. It is impossible to suppose that these degenerated vessels ever could regain their tone. A certain amount of shrinkage doubtless takes place after they have been for a long time kept from being over-distended. But the continued pressure exerted by the tampon is but the application of a principle which has been long employed in general surgery. It is reasonable to suppose, therefore, that the contents of these vessels become gradually organized, more or less adhesive inflammation is excited by pressure, and eventually the tract throughout is obliterated.

As to the material for and the method of introducing the tampon: The best material is the cleanest quality of cotton wool as sold in the shops and put up in rolls. For the tampon I prepared a number of pieces of cotton of about the width and thickness of four fingers. I then made a ball of each by turning the four corners or edges together, and while grasping these I thoroughly smeared the outer surface with vaseline. Each ball was then of about the size of an English walnut, and kept its shape as it was packed loosely into a tin box for use. It was found advisable to have these balls of cotton as nearly uniform as possible and of about the size that I have indicated.

On beginning the operation it is sometimes necessary to place the patient on the knees and chest before the uterus can be replaced. Then several balls are to be introduced and placed at a point where the uterus can be held by means of the finger while the patient is turning upon her back. I have already stated my reasons for preferring this position in introducing the tampon. One ball of cotton after another should be placed in the vagina and passed closely along the index finger of the other hand, which is engaged in pressing back the perineum and in holding up the uterus or that portion of the tampon already introduced. If one part of the vagina is more sensitive than another we must learn to "humor" it by making less direct pressure until tolerance becomes established. When the sensitiveness is situated in the neighborhood of one of the broad ligaments we must pack the cotton on the opposite side of the cervix to act as a crutch. If the inflammation is chiefly about the utero-sacral ligaments, it is easy to tampon so that the uterus will be lifted without making direct pressure. The tampon should be placed so as to make as little direct pressure to the left as possible along the course of the rectum. After the introduction of a sufficient amount of cotton we are to pass the index finger carefully over every portion to be certain that it is uniformly placed and to smooth down the entire surface. When this "finishing off" is properly done it is possible, from the coherency of the cotton and vaseline, to pack but a portion of the vagina. It may be but the upper part, or to one side, and it is likely to remain in position.

There are two practical points in the application which, if not carried out carefully, will cause all our efforts to miscarry. The first is to keep the uterus, throughout the whole course of treatment, as nearly

as possible in its natural position and at the same plane in the pelvis. The other is to place the fresh tampon without delay after the other has been removed. I have been in the habit of renewing the tampon daily for the patients in my private hospital. But if it could be kept deodorized, the longer it remained undisturbed the more thoroughly would both of these indications be met in practice.

The best instrument for removing the cotton is a piece of whalebone with a rough screw cut in the end, a simple device for the application of which we are indebted to the late Dr. Sims. This is easily passed alongside of the finger and twisted into one portion after another. It is well to leave that part directly under the uterus until the last, so that the finger may be slipped beneath the cervix, at the proper moment, to hold it in place until the fresh tampon can be introduced. To facilitate this, everything should be prepared beforehand. It is very evident if the uterus is allowed to prolapse, that just in proportion as it does so the circulation must be disturbed, and that if there is any advantage to be gained from maintaining a steady and uniform pressure, it must be, as nearly as possible, a continuous one. Therefore there should be no unnecessary delay in returning the tampon, as the blood begins again to rapidly dilate the vessels as soon as the pressure is removed.

A serious drawback to the satisfactory progress to be gained by this mode of treatment is the recurrence of the menstrual period, when the use of the tampon has to be discontinued. Just before the period is expected I remove the tampon and immediately introduce one of the rubber rings which I have already referred to, and one of a sufficient size to admit of the introduction of the finger between it and the vaginal wall at any point. These rings are about $\frac{3}{4}$ of an inch in diameter, and so long as the patient remains in the recumbent position their broad surface offers a fair substitute for the tampon both in exerting a direct pressure upon the larger vessels and by taking up the slack in pelvic tissues. As soon as the flow has ceased I have a large hot-water vaginal injection administered, and then apply the tampon as before in the continued treatment of the case.—*N. Y. Medical Journal*, February 18, 1888.

MEAT IN PHTHISIS.—COHEN, in a paper on this subject, says:

The opinion most widely prevailing at the present time assigns the first rank as an aliment in phthisis to flesh, and more especially to beef. The results obtained by certain individuals, who devote themselves to the treatment of disease by an exclusive diet of beef prepared in a certain and most excellent manner, conjoined with lavatory potations of hot water to prepare the digestive canal for the reception and disposition of the aliment, cannot be ignored, whatever we may think of the theories and methods of the practitioners in question. Without confining ourselves to beef, scientific physicians are justified in giving it the first rank. It should be taken at least twice daily, three times if possible. It may be eaten raw, as it comes from the butcher, or it may be

chopped finely, seasoned to taste, and made into little cakes, which are eaten raw or slightly browned on the gridiron. It may be taken in the form of rare beefsteak broiled in its own fat, or as very rare roast beef. Other methods of cooking are to be prohibited. The meat is to be as juicy as possible, and fibrous portions are to be removed.

Very often one can be satisfied with the use of butcher's meat, raw or cooked as above. Sometimes, however, whether from partial failure of digestive powers or other conditions necessitating reduction in bulk without loss of nutritive material, or suggesting conservation of the energy that would be expended in digestion, it becomes necessary to resort to special methods of preparation. The meat powders prepared by various pharmacists, more especially for forced feeding, here render valuable aid. By cutting boiled beef into fine pieces, drying by means of a water bath, and grinding in a coffee mill with the teeth set closely, an excellent meat powder may be made in the kitchen. (Dujardin-Beaumetz.)

The preparation from which Cohen has seen the greatest benefit, and which he is in the habit of most frequently prescribing, is beef peptonoids. Whether from improvement in the process of manufacturing, rendering it more palatable, or from decrease in the fastidiousness of patients, there has not recently been the same difficulty in getting patients to persevere in the use of it that was experienced in former years.

The methods of administration may be varied almost indefinitely. It may be added to soups and broths, to milk punch, egg-nogg, etc., taken in warm or cold water, or made into a paste with milk or water and spread upon bread. Beginning with a teaspoonful three or four times a day, the amount is to be increased, as soon as the preferable method of administration is determined upon, to a tablespoonful or more. It is preferably given among the supplementary articles of diet, between meals.—*Dietetic Gazette*, January, 1888.

POISONING FROM BORIC ACID, IN SURGICAL PRACTICE.—DR. SPENCER, of St. Paul, reports the following case: A short time since a woman was admitted to the City Hospital with syphilitic necrosis, and caries of the bones forming the ankle-joint. October 2, he removed by scooping, scraping, etc., parts of the lower ends of the tibia and fibula, and nearly all of the astragalus. The sinuses in the soft parts about the joints were scraped as clean as possible, the cavity was washed out with a weak bichloride solution, and packed with large clystals of boric acid, probably something over half an ounce being used. Although the wound was very foul-smelling at the time of operation, it was left undressed for a week and was then found nearly free from odor. Most of the acid was still undissolved in the cavity, but a small portion having been absorbed. It was washed out and dressed in the same way as before, and left for another week. During this time, fourteen days, her health, appetite, and general condition were good. She then began to lose her appetite, and in a short time had nausea and vomiting, which

grew progressively worse, so that, finally, nothing could be retained by the stomach. Lime water, counter-irritation, and cold to the epigastrium, morphia, ipecac, and all the various anti emetics were used in vain. Her other symptoms were restlessness, insomnia, the little sleep she did get being very disturbed, almost constant hiccough, great weakness and emaciation, and a very marked cardiac weakness. Although her pulse was very weak, there was none of the compensating rapidity which generally occurs in heart failure. She had a rather severe coryza, the conjunctivæ were very red and inflamed, there was marked inflammation of the fauces and pharynx, some bronchitis, and an acrid discharge from the anterior nares. Her tongue was red, glazed, and cracked. There was a very well-marked papular erythema, the papules nearly coalescing over the face, neck, arms, and upper part of chest. These symptoms came on gradually and grew worse for three days, at which time she was very weak, though she had taken considerable nourishment by rectum. The dressing was then changed, and the symptoms here noted began to disappear, although it was ten days before she was as well as before they began.—*Northwestern Lancet*, January 15, 1888.

TREATMENT OF SYPHILIS.—In the issue of the *Bulletin Gén. de Thérapeutique*, of October 30, is a useful paper on the treatment of syphilis, by PROF. VERNEUIL. As a representative of the more conservative of French surgeons, Verneuil speaks with authority on such topics. The conclusions at which he arrives harmonize with the opinions most generally held. He maintains the superiority of mercury. As respects the diagnostic value of the two agents—iodides and mercury—he never decides the question of specific lesion or not, except from the results of a trial of mercury. In three examples of old syphiloma of the testicle—cited for illustration—the iodide of potassium in massive doses failed to disperse the tumor, but mercurial treatment effected a cure in a few weeks, thus demonstrating the nature of the neoplasm.

Professor Verneuil does not advocate the huge doses of iodide of potassium now in vogue—2 to 3 grams (30 to 45 grains) per day being his maximum—except in cases of rapidly destructive ulcerations of the nares, veil of the palate, and similar lesions, and even then in quantity not exceeding 75 or 96 grains *per diem*. He has never favored the conjoint administration of mercury and iodides. He prefers to give mercury by itself, and associated with remedies to improve the general state of the patient. He has occasionally made use of the combination of these remedies in slowly developing secondary or tertiary accidents when mercury does not act well, or has not been given at all. Under such circumstances he prescribes in the simplest way $\frac{3}{4}$ grain of protoiodide of mercury and 15.5 grains of potassium iodide.

Mercurial frictions, although in some cases acting energetically, do not commend themselves to his judgment. When he has employed inunction, he

has not dispensed with the internal administration of the protoiodide or some other mercurial, in small doses. Nor has he practised the method of subcutaneous injection of mercurials, which often cures, apparently, in twenty to thirty days. He holds that the most certain curative results are obtained by the slow saturation of the organism as effected by the stomachal administration rather than by sudden impression.

For the local treatment of syphilitic ulcerations, mucous patches, etc., the early manifestations of the constitutional state, he employs nitrate of silver, or chloral solutions, topically, in conjunction with the use of mercury internally.—*American Journal of the Medical Sciences*, January, 1888.

TOBACCO AMBLYOPIA.—MR. EDGAR A. BROWNE, in an article on this subject, draws the following conclusions:

1. The optic nerve resembles a sensory tract of the spinal cord, consists of two tracts, of which the central has a special affinity for tobacco, while other drugs, e.g., quinine will leave it unaffected.

2. Tobacco is the essential agent in causing an axial neuritis, which does not in ordinary cases tend to spread to the nerve-fibres coming from the peripheral retina.

3. As a rule patients apply in the early stage of neuritis, and complete recovery may be expected without any treatment except entire cessation of smoking.

4. When recovery is established, moderate smoking is not injurious.

5. Although it would be absurd to suppose tobacco is the only agent capable of causing axial neuritis, no other has yet been substantiated in a series of cases arising in strictly non-smokers.

6. Besides tobacco a special condition is required to precipitate an attack; alcohol, diabetes, excessive venery, starvation, mental shock, or distress, are the most common auxiliaries.

7. In some persons a special tendency to degeneration (sclerosis or atrophy) exists hereditarily; to these tobacco is especially injurious.—*Liverpool Medico-Chirurgical Journal*, January, 1888.

TYPHOID BACILLI AND BOILING WATER.—In order to test the destructive power of boiling water on typhoid bacilli, DR. VILCHUR, of St. Petersburg, made a number of pure cultures in broth, keeping them in a thermostat for two days at a temperature of about 92° F., and then mixed them with known proportions of boiling water, immediately afterward sowing the mixtures in jelly. The results showed that, when the volume of boiling water equalled that of the culture, the bacilli were partially but not wholly destroyed. When double the volume of boiling water was used, the bacilli were all killed. From experiments with typhoid stools, he found that all the bacilli, however numerous, were invariably destroyed by the addition of a volume of boiling water equal to four times that of the stool. In this way he suggests it will be easy to disinfect with certainty all the dejections of typhoid patients.—*Lancet*, January 14, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MARCH 10, 1888.

MEDICAL LEGISLATION AGAIN.

In this Journal for January 28, 1888, we called the attention of our readers to the necessity, or at least the desirability, of more uniformity in the laws enacted for the regulation of medical education and practice in the several States, by citing some of the diversities at present existing and the inconveniences to which they must subject practitioners in moving from one State to another. In alluding to the medical registration law of Pennsylvania, we carelessly and erroneously mentioned a State Board for the execution of the law, when the law provides no State Board, but requires the registration of practitioners to be made by the prothonotaries of the several counties. An editorial in the *Philadelphia Medical Times*, of February 15, 1888, properly reminded us of this error, and then proceeds to pervert the whole tenor of our article. It calls our simple illustration of the working of that feature of the Pennsylvania law which requires all graduates from colleges outside of that State to have their qualification endorsed by the faculty of some medical college in that State, before they could be registered as legal practitioners, as *uncomplimentary*, and yet admits its entire correctness.

It proceeds further to commend the law on the plea that the possession of a diploma from a legally established medical college, either in this or foreign countries, could not be safely regarded as proof that the person actually had all the qualifications necessary for a safe practitioner of medicine, unless he obtained a special endorsement by the faculty of some

medical college in Pennsylvania. The correctness of this plea few will be inclined to deny; but, unfortunately, the inhabitants of the world outside of Pennsylvania will be so incredulous or uncharitable as to suspect that even the faculties of the medical colleges in Pennsylvania may award the diploma to some of their own students who are not possessed of all the qualifications desired. And if they should, how does the Pennsylvania law protect her own citizens from such? As we observed in our previous mention of this subject, the legislators of New York State have already returned the compliment by enacting a law that makes it necessary for graduates from medical colleges outside of that State (not excepting those in Pennsylvania) to apply to a medical college faculty in New York for special endorsement before they can become legal practitioners in that State. Now let Massachusetts enact a similar statute, and if any graduate in Pennsylvania, or New York, or elsewhere, wishes to practice in the old Bay State, let him get the proper endorsement in Boston. Then the States in the Mississippi Valley will not be slow in adopting the fashion, and the usually large number of graduates from the colleges of New England, New York and Pennsylvania who wish to settle in the West and South must submit their credentials and qualifications to the examination and approval of a medical college faculty in whatever State they propose to practice.

The specially ludicrous feature in this kind of legislation is the effort to protect the people of each State from the presumably unqualified graduates from the schools of other States, while they make no provision for protection from possible unqualified graduates from schools within their own boundaries; the practical result of which, would be to keep all the poorer medical students who *barely* succeed in graduating at the lower margin of the scale within the State where they graduate, through fear of failure to pass review by another college faculty elsewhere; while those most highly qualified, being well assured of their ability to pass review anywhere, would freely migrate from their own to other States or Territories wherever choice locations were to be found. But little less amusing is the assertion of the *Medical Times* that we evidently believe other examinations or safeguards than medical college graduation are not necessary to secure for the people a properly educated medical profession, when we have for fifty years, on every suitable occasion, advocated the establishment of a properly constituted Board of Examiners in each State, independent of all colleges or institutions for medical instruction, by whom all per-

sons proposing to study medicine should be examined concerning their general education, and admit to registration as medical students only such as furnish full proof of good English education, including mathematics, physics, the natural sciences, and in addition the elements of the Latin language; and by whom all persons proposing to enter upon the practice of medicine in any of its departments within the State should be fully examined in all the branches of medicine, both scientific and practical, and grant licenses or admit to registration only those who are found qualified, without any regard to college diplomas. And we have repeatedly advocated the same in the columns of *THE JOURNAL*, as our editorial confrère might have learned by looking over its editorial columns even during the preceding two months.

The medical legislation of North Carolina, Alabama, Virginia, and Minnesota, is already placed fairly on the proper basis, only needing some additional details, and we are hoping that the Committee appointed by the Section of State Medicine of the American Medical Association at the last annual meeting, will report such form of law as will receive the sanction of the medical profession generally, and will become the basis of the medical legislation in all the States, thereby securing substantial uniformity of laws regulating medical education and practice, instead of the present inefficient and too frequently contradictory enactments of the several States.

THE RELATIONS OF THE MEDICAL PROFESSION TO THE PUBLIC.

There seems to be a growing tendency on the part of the newspapers to gratify a morbid public curiosity and craving for harrowing and sickening details, however much individuals may suffer thereby, or however innocent the individual may be of having committed wrong or omitted right doing. And with this tendency there is another, almost as vicious, of the newspaper's presuming on the ignorance of intelligent readers, and neglecting to take measures to cure its own ignorance. In short, newspaper policy seems to be tending more and more to a reversal of the Golden Rule—which is just as good to-day as it was two thousand years ago—and one may sum it up as "Do unto others as you would not be done by."

But what has this to do with the relations of the medical profession to the public? So much: That physicians should see to it that when the public press seeks to encroach upon the rights of their patients—and patients have rights—they should not aid or en-

courage such infringement of the patient's rights by violating confidences. As the press has no right to pry into the personal maladies of a person and furnish them to the public, the physician, as a matter of justice to the patient, has no right to aid the press in any way in making unjustifiable disclosures.

And there is an ethical aspect of the question. In concluding his annual address before the Philadelphia County Medical Society, January, 1888, the PRESIDENT, DR. J. SOLIS-COHEN commented as follows on the relations of the profession to the public:

"It is to be deplored, on the score of professional ethics, that mention of some of our scientific work is occasionally noted unofficially in the public newspapers, despite the express interdiction in our By-laws. Whether this prohibitory clause be deemed judicious or not, it is plainly the duty of all members to accede to its behests. Those who disapprove of it should present their reasons for doing so in full meeting and should endeavor to have it rescinded. They have neither the right to ignore it on the one hand, nor the right to disobey it on the other. On several occasions when reporters of the daily press have been present at our meetings they have assured me that they were present on invitation of a member; that they had no desire to intrude, and had believed that their presence would be agreeable to the Society. This subject leads me to offer a few remarks upon certain relations of the profession to the public. While there is no reason to doubt that much of the individual editorial advertisement of subjects discussed or to be discussed at societies, or of operations performed or to be performed in public places or in private, is due to officiousness on the part of a student, a follower, an attendant or a patient, there is equally good reason to believe that most of it is courted, directly or indirectly, by the individual most interested. Of this fact I have been amply assured by newspaper men who have been my own patients, and to whom I have put the question direct. I have been assured, further, that it could be taken for granted that little matter of personal medical importance ever gains access to the papers without the knowledge of those most intimately concerned. On the other hand, it is equally true that matters of some immediate momentary interest to the public do not always reach the newspapers, even when passing through the mails in hundreds of notices openly printed upon postal cards.

"While it is gratifying to believe that this itch after newspaper notice may be much less prevalent in Philadelphia than in some other localities, the hope is to be indulged that it may eventually become en-

tirely extinguished. The disease at present is in great measure a mere matter of taste—quite poor taste, according to the ethics of the Philadelphia County Medical Society.

"One custom in which the ordinary conduct of the physicians of Philadelphia is to be commended, in their relations to the public, consists in their unwillingness to cater to gratifications of the morbid appetite of the newspaper public for tattle as to the nature of the diseases with which some of their distinguished patients may be afflicted, and as to the prospects of their death or survival. Propriety indicates that such inquiries should be referred to the patient if he be in a responsible condition; or, if otherwise, to that member of the family upon whom the responsibility has devolved. The confidential relations of a patient to his physician should remain undisturbed even when the patient is no longer competent to withdraw his confidence, and no communications presumptively disagreeable to him in his senses, should be furnished for press gossip without the consent of those who are most immediately interested. The pleasure derived by an invalid from the daily perusal of his favorite newspaper is often exceedingly great; far greater than when, under the press of affairs, he read chiefly headings and telegraphic items. He reads it much more thoroughly, sometimes even to the advertisements. As he reads day by day, of what is going on in the great world outside, his little world of bed-room life seems somewhat less constricted. Let us avoid curtailing his gratification by acts of ours. If his newspaper cannot be taken up without a dread of seeing some paragraph discussing the nature of his malady and the prospects of his early demise, this innocent source of enjoyment is poisoned for him. He must rest content with a mutilated paper, the very gaps in which are repulsively suggestive, or he must consent to have it read to him, or give it up altogether and thus become deprived of taking interest in many things outside of his own illness. It is hard enough for him to fear or to know that his malady is incurable, without having the fact forced upon his attention at some comparatively happy moment when it is out of his thoughts. Harder still, perhaps, to steel himself into indifference.

"It is unnecessary to mention examples. They must be familiar enough. In some instances there has been abundant reason to believe that death has been hastened by thoughtless comments in newspapers. Shall the individual always be sacrificed to the multitude? It has been stated that occasionally, when potentates or very wealthy individuals have been the

subjects of these items, special copies of newspapers have been printed for their use, in which the objectionable personal passages of the general edition have been replaced with other matter. But there is little hope that the sores of the afflicted shall not be exposed to public gaze, unless their own physicians protect them by the charity of their reticence. The public maw is so rapacious, that the average newspaper man dares not deprive it of any tidbit, however unfit the food, and, worse than the cannibal who sometimes kills the sick man that his people may devour him, the editor sometimes delivers the sick man to his readers that they may devour him even while he is dying."

HUMAN AND ANIMAL TUBERCULOSIS.

The announcement and programme of a Congress of Physicians and Veterinarians to be held in Paris on July 25-31, for the study of human and animal tuberculosis, have been received. The Committee on organization has selected the following questions for discussion:

1. The dangers of the use of meat and milk of tuberculous animals. Methods of preventing them.
2. The human races, animal species, organic media considered from the point of view of their aptitude to tuberculosis.
3. The ways of introduction and propagation of the tuberculous virus in the economy. Prophylactic measures.
4. The early diagnosis of tuberculosis in man and animals.

In addition to these subjects the Committee desires to direct special attention to the following subjects:

Heredity of tuberculosis in man and the different species of animals. 2. The contagiousness between man and man, between animals, from animals to man, and vice versa. 3. The different modes of evolution of experimental tuberculosis according to the quality and quantity of the virus inoculated. 4. Difference in tuberculous affections in different species of animals. 5. Methods of distinguishing the lesions caused by the bacillus of Koch, granulations, and inflammations due to different microbes (zoogloea, bacteria of contagious pneumonia of swine, aspergilli, etc.) to animal parasites, or to foreign bodies. 6. Tuberculous lesions complicated by other microbial lesions. 7. Mode of formation of giant cells and isolated tuberculous deposits. 8. Evolution of local tuberculosis. 9. Agents destructive of the bacilli of Koch. 10. Local and general

means capable of arresting the extension of experimental tuberculosis. 11. The value of surgical therapeutics in tuberculous affections.

In addition to these subjects voluntary papers will be received provided they are confined to the subject of tuberculosis. Foreign physicians and veterinarians may become members of the Congress by writing to the Treasurer, M. G. Masson, 120, Boulevard Saint-Germain, enclosing \$2.00. The Secretary-General is Dr. Petit, 11, Rue Monge, Paris.

INJECTIONS OF ALBUMEN AND ALBUMINURIA.

DR. PAUL SNYERS has recently completed a series of experiments undertaken for the purpose of controlling the experiments of Semmola on the pathogenesis of Bright's disease. He injected into dogs white of egg diluted with a small quantity of distilled water. The operations were done by means of a syringe of double the capacity of the ordinary Pravaz syringe. The syringe was carefully disinfected before each experiment, and the quantity of albumen injected varied from 4 to 5 grams per kilogram of the animal's weight. When this quantity is compared with the amount of albumen excreted daily by the kidneys in the gravest forms of nephritis, it is seen that the quantity injected into the dogs was incomparably greater than that excreted. After the animals were killed the kidneys were examined in the fresh state by congelation, and after the action of osmic acid, absolute alcohol, Müller's fluid, or boiling water. Continuous injections during three, six, nine, and twenty-three days never produced glomerulitis. At certain points albuminous coagula were found, and a little diapedesis on the interior of the capsule. In no case was there any fatty degeneration of the epithelium. These facts led Snyers to draw the following conclusions:

1. The albuminous (albuminuric) dyscrasia determined by the injection of egg-albumen is transitory, and ceases within twenty-four hours after the injections. The albumen found in the urine is only the white of egg that has been injected. It is a useless substance, passes through the organism, and is eliminated naturally by the kidneys without producing any lesion.

2. Histological examination of the kidneys shows no sign of any lesion of these organs, even after the injections have been carried on for thirty days.

3. The fact that injections of white of egg cause an albuminuria that is absolutely transient, and without action on the renal parenchyma, permits the conclusion: injections of white of egg are incapable of

producing either the lesions of nephritis, or a pathological albuminuria.

These experiments, recorded in the *Bulletin de l'Académie royale de Médecine de Belgique*, absolutely contradict the experiments and conclusions of Semmola, with regard to the causation of a clinical picture of Bright's disease by subcutaneous injections of white of egg.

STROPHANTHUS IN METRORRHAGIA.—DR. V. POULET, of Plancher-les-Mines, calls attention in the *Gazette de Gynécologie*, of February 13, 1888, to the use of strophanthus in metrorrhagia of the menopause and that of very fleshy women during the age of fecundity. As is well-known, ergot is very useful in the first class of cases, but has little or no effect in the second. But Poulet has used strophanthus in both classes of cases for almost three years. But he has used the drug *in substance*, 5 centig. of the recently powdered seed with a sufficient quantity of honey to make one pill. Two pills are taken the first day, three the second, and four a day after that, if necessary. Poulet claims, also, that he has had exceptionally good results from the use of strophanthus in typhoid fever, and will soon publish his cases.

"THE MEDICAL JURISPRUDENCE OF INEBRIETY," a volume of 200 pages, is announced as soon to appear from the press of the *Medico-Legal Journal*, No. 57 Broadway, New York, N. Y. It is to contain the large number of papers presented and discussed by members of the New York Medico-Legal Society, and others, touching the relations of jurisprudence and inebriety. The price of the volume in cloth is to be 60 cts., and in paper, 30 cts., orders for which may be addressed to the *Medico-Legal Journal*, New York.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.—We have reliable information that the publication of the Transactions of the recent Medical Congress at Washington, is progressing satisfactorily; with the strong probability that at least three volumes will be ready for delivery early in May next. The members of the Committee of Publication are pushing the work as vigorously as possible.

THE ADDRESS OF S. T. ARMSTRONG, M.D., U. S. Marine Hospital Service, Secretary of the Section of State Medicine, of the American Medical Association, is "U. S. Marine Hospital Service, New York, N. Y."

SOCIETY PROCEEDINGS.

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, November 10, 1887.

WM. G. WHEELER, M.D., IN THE CHAIR.

A communication from the PRESIDENT, DR. H. M. FIELD, was read, in which he resigned his office because his own health and that of members of his family demanded that he should spend the coming winter in a milder climate. On motion of Dr. L. F. Warner it was voted that the resignation of the President, Dr. H. M. Field, be accepted, and that the thanks of the Society be given him for his efficient and valuable services in its behalf.

PATHOLOGICAL SPECIMENS.

DR. E. C. KELLER exhibited to the Society the two following specimens which had been removed by her from patients at the New England Hospital:

Case 1. Removal of Ovaries and Tubes for Pyosalpinx.—Patient, æt. 44, had suffered excessive pain since last June and temperature had been high; excessive abdominal tenderness. On operation pus was found in the tubes and ovaries. Pus had also escaped into the abdominal cavity. A fibroid was found on side of uterus opposite to pyosalpinx. Recovery.

Case 2. Multilocular Fibroid.—Patient, æt. 45, had flooded for two years; recently it had recurred every ten days and had been excessive; patient was blanched and life had become a burden. There was no pain. A multilocular fibroid was removed and patient made a good recovery.

DR. A. L. NORRIS presented a specimen of

CANCER OF THE STOMACH,

which was especially interesting from its history. Patient, æt. 76, forty years ago thought that she swallowed a water limpet while drinking water. She has always maintained that the animal remained in her stomach, and she has suffered much of many doctors in her efforts to get rid of it. Dr. Norris saw her but recently and made the diagnosis of cancer of the stomach. On autopsy such was proved to be the case.

DR. H. O. MARCY then read a report of

A YEAR'S EXPERIENCE IN PRIVATE HOSPITAL PRACTICE.

Whole number of operations, 81; deaths, 1. Restoration of the perineum, 11; anterior colporrhaphy, 3; urethral carunculæ, 2; curetting endometrium for various causes, 25; operations for the repair of the cervix uteri, 9; cancer of the uterus, 4; removal of cancer of the breast, 5; laparotomies, 7; Alexander's operation, 1; hernia—radical operation, 2; hemorrhoids, 3; miscellaneous, 9.

In the entire list of the year's work there has not been in his private hospital a single case of septicæmia. The walls and floor of his surgery are washed with 1:1,000 mercuric bichloride solution before each important operation, and the room closed for an hour subject to the spray of carbolic acid. The

spray is not used, as a rule, during operation. Surgeon and assistants must be specially clothed, and cleansed by scrubbing with mercuric bichloride and soap even to hair and beard. Dr. Marcy's method of restoration of the floor of the pelvis in cases of ruptured perineum is somewhat peculiar. The portion of the levator ani anterior to the rectum is the part of the muscular structure which has been ruptured, and it is the restoration of the separated, retracted portions which he holds as important to secure. This is best effected by freeing the posterior half of the vaginal muscle from its attachment. It is easily done by making the parts tense with two fingers in the rectum, splitting the tissues, in considerable degree cicatricial, until the loose connective tissue septum between vagina and rectum is reached. The separation is carried to the *upper border* of the prolapsed vaginal wall and is held forward by an assistant, while the floor of the pelvis is restored by tendon continuous suture. This is best effected by the use of a rather large, fully curved needle, the Hagadorn pattern preferred, burying the suture deeply in order to bring together the retracted muscles. The detached vaginal portion is carefully adjusted to restore the vaginal opening, and the edges coapted by a fine tendon continuous suture. In cases of extensive injury, the double pin is used so as to hold firmly at rest the tissues during repair. Where there is complete rupture the same operation is advised, after the dissection closing with great care the rectal and then the vaginal side of the triangle.

The fatal case was from rupture of a papillomatous cyst of the left broad ligament.

DR. S. N. NELSON exhibited two specimens from two of the cases referred to by Dr. Marcy.

Case 1. Cancerous Uterus removed by Hysterectomy.—This uterus had been repeatedly curetted for the relief of the flooding, until nothing but a shell of the original uterus was left. Hysterectomy was decided upon and was done by Dr. A. Martin, of Berlin, during his recent visit to this city. Sepsis supervened, but a satisfactory recovery ensued, and the patient was discharged at sixth week.

Case 2. Ovarian Tumor consisting of a Single Cyst.—The principal interest attached to this case was the ectatic type of the vessels of the broad ligament supplying the tumor. To guard against hemorrhage from these vessels Dr. Marcy used a double line of sutures with the shoemaker's stitch.

DR. E. W. CUSHING said that the cases usually called adenoma of the uterus had interested him the most. In the case reported upon which hysterectomy was done for cancer he had curetted the uterus thoroughly in 1885 for a growth that was then called by competent men a simple adenoma. He had at that time prophesied that it would eventually prove to be cancer, and such was the case. These cases are constantly appearing which, according to present authorities, are simply glandular, but which are really practically malignant. The question naturally arises, where do the simple glandular changes end and cancer begin? Schroeder's teachings do not represent the facts in regard to these growths. Future study upon this point will lead to an earlier recognition of

the malignant tendency of these growths and the necessity of radical measures. When an adenoma appears after the climacteric and shows a tendency to bleed freely it is cancer, and hysterectomy should be done.

In cases of repair of the perineum Dr. Cushing had been led by experience to depend less upon the pins than upon deep sutures. These sutures should be of catgut, and if they are thoroughly antiseptic they will become organized and cause no trouble.

The question as to what should be done with the flap of vaginal mucous membrane has never been definitely settled. If it is simply left it is likely to become oedematous and tender. Dr. Cushing's practice has been to sew this flap to the floor of the vagina. If the suturing is carefully done with fine sutures, no trouble will follow. This method will supersede all others, because in this way all the mucous membrane is saved. This consideration is an important one when we consider that the patient may become pregnant and need all possible material to secure proper dilatation of the vagina.

DR. A. P. CLARKE said that he had seen Dr. Cushing operate for repair of the perineum, and considered it wonderful to save so much tissue.

DR. E. C. KELLER asked Dr. Marcy in regard to his experience in dilating and curetting the uterus for relief of dysmenorrhœa.

DR. MARCY, in closing the discussion, said that he regarded the treatment of endometritis by dilatation and curetting as a gain. If the uterus and cervix are surgically clean the cervix can be forcibly dilated with safety. The parts are first thoroughly cleansed by the use of a 1:2,000 hot bichloride solution, and then the cervix is rapidly dilated to a No. 25 F. scale. This will admit the curette. Curetting changes the vascularization of the uterus; in this way it changes the nutrition of the tissues and relieves dysmenorrhœa. In regard to operations for repair of the perineum Dr. Marcy said that this operation was simple, both in its principles and technique, but that as yet there was no settled conviction among the profession as to the best method. The leaders of the profession in New York pay no attention to reuniting the muscular fibres of the transversalis perinei, and thus overlook an essential feature of the operation. When a tear of the perineum of any magnitude occurs the fibres of this muscle are severed and are retracted to a greater or less extent. As long as these muscular bands are left ununited they tend to draw back the posterior vaginal wall and to increase the difficulty. In the operation the mucous membrane of the posterior vaginal wall should be thoroughly dissected up and the ends of the transversalis perinei sought for and united by catgut sutures. Only by doing this can the best results be reached. This point in regard to uniting the muscle was overlooked by even Dr. Jenks, who originated the method of dissecting up the posterior vaginal mucous membrane. He did this only as a protection for the damaged parts below. Dr. Marcy denied that the transversalis perinei is ever histologically absent, as is claimed by some who deny the necessity of reuniting the fibres of that muscle.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, December 8, 1887.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

(Concluded from page 212.)

DR. HAMILL exhibited a

UTERUS REMOVED FROM A WOMAN IN THE LAST MONTH OF PREGNANCY.

As the opportunity is not often afforded to examine the uterus at an advanced period of pregnancy and as this particular specimen presents several well marked and interesting features I felt that it would be of interest to place it before the Society. The uterus was removed twenty-four hours after death; inasmuch as I was present at that hour I wished to do so immediately but could not secure the consent of the family. I shall very briefly call attention to the several conditions noticed. The outer surface of the uterus is studded with syphilitic nodes. The woman had contracted syphilis early in her married life and manifested other marked symptoms of the disease. There is also a small cyst of the broad ligament. The specimen presents quite markedly the contraction ring or ring of Bandl. I give both designations advisedly inasmuch as it is not definitely determined whether this ring represents the internal os as Bandl claims, or whether it marks the boundary between the upper and lower uterine segment as Schröder believed. According to the investigation of McDonald, Müller, Sängner and Lusk this condition does not always exist. In three autopsies made by Lusk he failed to find any trace of Bandl's ring. Schröder in a frozen specimen found this ring very distinctly but claimed that it was the dividing line between the upper and lower uterine segment. Bandl holds the contraction ring of Schröder to be the true internal os and consequently one would expect to find below this ring cervical mucous membrane, whereas, the portion between Bandl's and Müller's ring is covered by deciduæ. Bandl explains this by his three hypotheses, 1. The deciduous membrane is crowded down into the cervix by the weight of the presenting part. 2. In primiparas the advancing head strips off the mucous membrane which is replaced by deciduæ. 3. That the cervical mucous membrane is transformed into decidual membrane during pregnancy.

Another interesting feature that the specimen demonstrates beautifully, is that condition pointed out by Leopold and Lusk, as seen in their Cæsarean sections, viz.: the delicate filamentous bands running from the chorion to the deciduæ, which are the atrophied villi of the chorion. The attachment of the placenta is to the posterior wall of the uterus.

DR. HIRST had seen the frozen section made by Schröder, in 1884, and it was most interesting showing distinctly the so-called ring of Bandl. He did not believe in any one of Bandl's three hypotheses to account for decidual membrane in a place where according to Bandl's theory, cervical mucous membrane should be found. The extraordinary diversity in the explanation advanced by Bandl shows plainly enough

the insufficient ground upon which his theory rests.

DR. M. PRICE firmly believed in hunting for anatomical facts upon the living subject. He had looked for Bandl's ring and had never been able to find that it existed. He is fond of turning in badly presenting children and has had his hand in the uterus many times. He has had it so compressed that it was useless for some moments; the compression was always uniform and from all directions. He has yet to find any constriction in the region of the so-called Bandl's ring alone. He has in several cases observed hour-glass contractions, but this was due to continued pressure on one side of the uterus, and consequent loss of contractility of that portion. He does not believe that hour-glass contraction ever occurs in uncomplicated labor.

DR. PARISH remarked that in a Cesarean section performed by Dr. Foster, of Maine, the operator had observed a circular contraction. This went to prove that such a thing could occur. In two cases of Cesarean section performed by himself no such contraction had existed, and likewise there was no such circular contraction in a third case operated on by Dr. Allis and himself.

DR. GITHENS stated that in discussions before the Society in October, 1879, in December, 1879, and in October, 1880, upon the subject of "Hour-glass Contractions of the Uterus," Dr. Albert H. Smith, Dr. R. G. Curtin and Dr. W. H. Parish had reported instances of prolonged and forcible contractions of a ring of muscular fibre in the uterus above the internal os, the lower and upper segments of the uterus remaining flaccid. In Dr. Curtin's case Cesarean section was being performed, the uterus had not been emptied of the contents and the ring of contraction was seen as well as felt. In the other case a placenta or twin fetus was retained in the upper segment of the uterus. May not this ring of muscular fibre so contracting be identical with that described by Bandl? In the case reported by A. H. Smith, the condition lasted for two hours and was relieved by hot-water intra-uterine injection. The doctor reported the point of contraction as being at the internal os but as he was opposed to the idea of there being any such thing as a contracting ring higher up we may make some allowance and consider that it occupied a position near that described by Bandl as the location of the contraction band.

DR. R. STEWART had seen a case in which after the child was removed the patient began to show signs of internal hemorrhage. The uterus was examined and found to be much distended. An attempt was made to pass the hand in but it was done only with difficulty as there was a powerful contraction in the lower segment. The body was found distended and very flaccid, and filled with blood. He thought that this case proved that a contraction could occur in the lower segment.

DR. HIRST quite agreed with Dr. Price in thinking that these cases always arose from pressure. He had seen good examples of Schröder's contraction ring in which the ring marked the dividing line between the upper and lower segments of the uterus, and was not at all due, as might be inferred from some of the

preceding remarks, to contraction of the circular muscular fibres, but was merely the sharply defined boundary between the upper, thicker and more muscular portion of the uterus and the lower, thinner, more fibrous portion above the true internal os.

DR. HAMILL observed that the patient had formerly suffered from Graves' disease but had no active symptoms at the time of death. She had died of heart failure.

DR. HAMILL presented, also,

A FOUR WEEKS' OVUM ENTIRE WITH THE DECIDUEA.

He presented this specimen for a two-fold reason.

1. On account of its comparative rarity. 2. To elicit from the members of the Society their views on the after treatment of abortion. The expulsion of the deciduea vera is not as a rule thrown off with the ovum entirely. Dürhssen says, "from a personal experience with more than 150 cases of abortion in the service of the Charity of Berlin that the retention of portions of the deciduea vera is not the exception but the rule," and Tarnier says "that ordinarily the uterine deciduea remains adherent to the uterus." Whether it is safer to leave this in the uterus and allow Nature to throw it off or to remove it at once is the particular point I should like to hear the members discuss. For my own part I feel sure that it should be immediately removed. As to the manner I shall say nothing.

DR. HIRST said that when the deciduea vera is retained as is the rule in early abortions, one of two things happened; the mass either putrefied and thus became a source of septic infection, or it became greatly thickened and remained as a foreign body, exciting frequent hemorrhage or constant leucorrhœa. He always cleaned away any debris left in the uterus after abortion.

DR. GOODELL agreed fully with Dr. Hirst as to the propriety of removing the retained fragments of the placenta or the membranes, but he had a word to say about the manner of their removal. He deemed the much-vaunted curette, whether sharp or blunt, a very inferior instrument, especially so whenever the fragments had been retained for several weeks. Not only did the curette bruise and injure the unimplicated portion of the womb, but it tended to glide over the fragment, merely scraping the surface. Sometimes, indeed, it would hook up one end of the fragment and after causing a great and needless flow of blood, would slip off. So often had he been disappointed with it, nay even alarmed by the great loss of blood, that he now used either a small fenestrated polypus forceps, when the os was dilated enough to admit it, or a slender handled catch-forceps. With these instruments the fragment was invariably seized and removed by a twisting movement, while the womb itself sustained no injury whatever. It was in fact safer to use these instruments in the womb than to catch a stone in the bladder with the lithotrite.

DR. PARISH had seen a number of mistakes made with the curette. He had been called to a case and found a woman who had been bleeding for four or five months. Her former attendant had curetted and pronounced the womb empty. He and his colleague

dilated and removed a body as large as his two fingers. In another case the uterus was curetted by the attending physician and pronounced empty. Within twenty-four hours the patient aborted. These cases well illustrate how one may be deceived as to when the uterus is empty when relying on the curette. In his own practice, after three months if there is no retention he introduces his finger and delivers everything. He thinks with Dr. Goodell, that something more reliable than the curette must be used to enable one to say that the uterus is empty after abortions in doubtful cases.

DR. LONGAKER does not interfere before the third month at all unless the patient has decided signs of retention, such as hemorrhage, patulous os, etc., otherwise it is as a rule safe to conclude that everything has come away. During the third, fourth and fifth months retention is very frequent. He thought it surprising what a small portion of placenta would give serious trouble, even small shreds will keep up a very serious hemorrhage. He always removes anything which has been retained and uses the finger and very frequently anesthetizes the patient.

DR. R. STEWART asked the members of the Society in what proportion of cases they had to interfere. He has never used the curette for this purpose and has never failed to remove with forceps of proper size. The hemorrhage generally ceased in from twelve to fifteen hours; if not he investigates and usually finds some debris left behind, but is convinced that if there has been no improper interference at the time of the abortion, such cases are exceedingly rare. He agrees with Dr. Longaker as to the amount of trouble kept up by small pieces of membrane, etc.

DR. HAMILL also presented

A FETUS SHOWING INTRA-UTERINE RACHITIS.

This specimen presents a number of anomalies; probably the one most rare is the condition of intra-uterine rachitis; you will note the marked rachitis condition of both femurs. So far as I am able to find 53 cases having been collected by Schorlan and Graefe. This condition of the bones in rachitis may be simulated by the arrest of bony development in those cases of foetid cretinism occasionally met with in Europe. The absence of the three fingers and corresponding metacarpal bones would, following the classification of Geoffrey St. Hilaire, place this among the Hemiteratic class and the subdivision of that class known as Anomalies by Numerical Diminution. This form of monstrosity is not met with very frequently. The absence of the fibula renders the specimen still more rare.

DR. J. PRICE exhibited

A PIECE OF THE LARGE INTESTINE

removed that day by Dr. Charles B. Penrose. The patient, a woman, had not had a passage of the bowels for twenty eight days. There was enormous distension. The constriction was easily found on the right side of uterus and posterior. The intestine was punctured and a gallon or more of feces removed. The gut was then resected, a piece twelve inches long removed. The two ends of the gut were then united in half their circumference and the other half stitched

to the abdominal opening, making an artificial anus. Dr. Agnew had seen the case and had recommended immediate operation. The woman was a patient of Dr. Bernardy's. She is now doing well. He believed that Mr. Tait had first advised the preliminary puncture to relieve the distension in conditions that cannot be dealt with by resection. He had some letters from Dr. McMurtry, of Danville, Ky., who had been called 45 miles into the country to see a physician 26 years old. On opening the abdomen he found two perforating ulcers of the cæcum with local peritonitis. He had trimmed the edges of the ulcers and closed with Lembert sutures; irrigation and drainage. On the fourth day: pulse 92, temperature 99, and patient had complete evacuation of bowels.

DR. PRICE also exhibited a

PELVIC-BOUND FIBROID.

Woman, 37 years old. Small. Tumor on anterior face of pelvis bound fibroid could almost be picked up through the abdominal walls. The R. tube contained blood and the ovary was bound down by adhesions. The R. tube and ovary were then tied off, but the L. tube and ovary were so imbedded in a mass of large venous sinuses that it would have been dangerous to have interfered with the ovary. The tube was removed. A clamp was passed around the tumor which had been lifted out of the abdomen and the mass was removed. The clamp came off on the seventeenth day. Temperature was never above 100°; pulse above 65. In connection with this case he remarked that tubal and ovarian trouble complicating fibroids was very common. Dr. Keith had found all the tubes diseased in about all his first 38 cases of hysterectomy. In 9 cases he had attempted to remove them but had failed, and finished by hysterectomy. He was surprised to find Dr. Keith condemning the operation and thought that his statistics explained the matter. His mortality in private practice was less than 4 per cent., and in hospital practice more than 15 per cent.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, February 8, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. MORDECAI PRICE read a paper on

A CASE OF NEPHRECTOMY FOR GUNSHOT WOUND.

Maggie McG., of Avondale, Chester County, Pa., aged 14 years, white, pale, anæmic girl, was accidentally shot on Wednesday, Dec. 21, 1887, at 9 o'clock in the morning, while handling a four-barreled Sharp's pistol, 30 calibre. She had the muzzle of the pistol turned toward the right side; while attempting to raise the lock with the thumb of her left hand it slipped from her hold and fired the cartridge, which entered her body at the junction of the ninth rib with cartilage, passed directly through the left lobe of the liver, entered the upper third of the kidney, and passing through lodged in the deep mus-

cles of the back near the spine. When we first saw her—twenty-four hours after the accident—her condition was an exceedingly alarming one; pulse 150, temperature 103°. She had passed, soon after the accident, a large quantity of blood from the bladder. But at the time of our seeing her she was not passing blood from the bladder, showing that if there was still hæmorrhage it was into the peritoneal cavity, and also that the bladder was not wounded, for the urine was normal.

Symptoms of peritonitis were well marked; abdomen considerably distended. We had no difficulty in coming to a conclusion as to what was best to be done. Dr. Charles Penrose and myself at once advised the removal of the kidney. This was concurred in by Drs. Hudder and Ewing, the attending physicians. The patient was etherized and opened. A large quantity of clotted blood was removed from the abdomen, the wound of the liver was examined, both entrance and exit. No hæmorrhage was found coming from it. The abdominal incision was then enlarged, and the blood removed from the region of the right kidney, when it was plainly seen that the hæmorrhage was from that organ. The kidney was examined and found to have a hole in its upper third, large enough for a finger to enter. I then made a button-hole opening through the peritoneum with scissors, introduced finger and enlarged the opening by tearing, and without much difficulty nucleated the kidney from its bed. The ascending colon was pushed back or inward toward the spine, and the opening in the peritoneum, through which the kidney was removed, was made in such a manner that the vessels of the bowel were not disturbed. The ligaturing of the pedicle was exceedingly difficult, Dr. Penrose having to tie the ligature the full length of his hand in the peritoneal cavity. Two ligatures were applied, one through the pedicle tying it in halves, the other, a large, heavy ligature in one knot; then the kidney was cut away and the ligature tightened before making the second knot. The stump of the pedicle, or button, as it is called, to keep the ligature from slipping, had a portion of kidney structure in it. There was complete irrigation. A glass drainage tube was left in the kidney wound and the abdomen closed. The patient rallied nicely from the ether, and, on the morning of the second day, Epsom salts was given in large and repeated doses, but could not be retained. On the morning of the third day a second attempt was made to have her bowels moved. Rochelle salts was used, followed by two or three evacuations and passage of flatus by the bowels, which gave great relief. Patient did uninterruptedly well, with temperature not over 102° up to the time (eighth day) of the removal of the glass drainage tube, when rubber drainage was substituted and was left too long, producing quite a rise of temperature and fetid pus at the bottom of the tube, which was at once relieved by the attending physicians removing the tube and cleaning drainage track.

On January 4 was telegraphed for, patient's temperature having been up to 103° the previous night. Abscess was suspected either in the liver or the muscles of the back. I met Dr. Hudders and Dr. Ewing,

her attending physicians, in consultation, and found no positive indication of abscess—the girl being in a moderately good condition at the time, with a slight tendency to diarrhoea—temperature 100.4, pulse 100. She continued to do well until January 11, when Dr. Ewing wrote me: "Some new trouble seems to be developing in our patient; her temperature is 103.2, her liver is enlarged and tender; complains of pains in left side and shoulder." On the 12th there was quite a gush of pus and bile from the drainage tube opening—about two ounces; this at once relieved her of high temperature and quick pulse. She has had many changes in the last three weeks, with slight discharge of bile and pus from the drainage tube, but has constantly, but very slowly improved. Her physicians have given her every attention, and to them I am greatly indebted for the care they have given her; nothing but their interest in the case could compensate them for their labors. For the result in this case I am greatly indebted to Dr. Charles Penrose, for assistance rendered during the operation. Length of incision six inches. Kidney removed for hæmorrhage.

DR. EWING, of West Grove, said: I have nothing to add, except that the condition of the patient is better than Dr. Price states. To-day there was only a drachm of pus discharged. There is refreshing sleep; temperature is normal in the mornings, though there is a slight evening rise; appetite is good; the bowels are regular. I feel that recovery is assured. This child was on the verge of death when the operation was done—the pulse was 150; temperature 103; the extremities were cold; body covered with clammy perspiration. Improvement was manifest at once. I am personally much indebted to Drs. Price and Penrose for this operation, and I attribute its success to the neatness and dispatch with which everything was done, exhibiting a high order of skill.

DR. J. B. ROBERTS said: The case speaks for itself. While I cannot speak from experience, it has occurred to me, and the same suggestion has been made by others, that the difficulty of tying the stump so far down and behind the peritoneum might be lessened by getting the kidney enucleated and then twisting it so as to apply torsion to all the renal vessels, veins as well as arteries. Afterward the ligature might be applied with more ease, and this whether abdominal or lumbar incision be made, though in the absence of experience I judge that it would be easier to do this with a lumbar incision. I presume that there was no intestinal wound in this case, no mention having been made of any.

In connection with the operation by lumbar incision I might refer to an error of my own which illustrates the mistakes our lack of familiarity with operations in this region may lead us into. The operation was undertaken for a supposed stone in the kidney; but as no stone was found, it resolved itself into an exploratory incision and acupuncture of the kidney. The ordinary lumbar incision had been made with care, and I had come upon the kidney with ease. It was suggested that I should enlarge the wound upward and explore the upper end. A few muscular

fibres stretched across the upper angle of the wound, and these I divided by a small cut, when a rush of air into the pleural cavity informed me that I had cut a small hole in the diaphragm. The accident did no harm; it was easily remedied with a few sutures; and the dyspnoea that persisted for a few days was attributed by the patient to the tightness of the abdominal bandage. I was not sufficiently familiar with operations in this region to realize to what extent the posterior attachment of the diaphragm to the vertebrae dips down here, especially when I saw, as I did, the main mass of the diaphragm bulging down as a great sheet in front of the point where I made the additional incision.

THE PRESIDENT said: How does Dr. Price account for the bile?

DR. PRICE said: I cannot say where the bile comes from, except the liver. The wound in the liver is about two inches from the gall-bladder. The ball took a diagonal course and came out at the margin of the liver, and then entered the kidney. I did not know what the effect of twisting the pedicle would be. I could bring the edge of the kidney within an inch of the wound. I consider the abdominal incision the proper one. In this case there were several considerations in its favor. Hemorrhage had already taken place into the peritoneal cavity; it gave us the chance to examine for wounds of the liver and intestines. We found only wounds of the liver and kidney. The liver was not bleeding, and we had only the kidney to deal with. In view of the discharge of pus from the liver, I now believe that it would have been better to insert into the track of the bullet in the liver a small glass drainage tube—this of Bantock's, which is of about the same diameter as the ball—and drained it. If, as has been stated to me by Dr. Wood, there has been no case of recovery from bullet-wound of the liver, we are not going to make the prognosis any worse by draining, and I think we might make it better.

DR. FRANK WOODBURY read a paper on

A CASE OF NEPHRECTOMY FOR PYONEPHROSIS.

In connection with the case reported this evening, I will briefly relate the notes of a case of nephrectomy performed for me by Drs. Deaver and Agnew, last year, at the German Hospital:

The woman first came to me in the spring of 1886, for vesical irritation, with bloody urine. She had had several such attacks following exposure to cold and wet some two years previously. In September of the same year there was another attack. The urine contained pus, but no blood. I washed the bladder with boric acid and alkalies, and subsequently with a weak solution of nitrate of silver. The pus continued, epithelial tube-casts appeared, and a tumor slowly developed in the right side. Dr. Deaver saw the case in consultation and concurred in the diagnosis of pyonephrosis of right side consecutive to inflammation of the bladder. Dr. Agnew saw the case on December 25, and agreed in recommending operation. On January 10, 1887, nephrectomy was carefully and skilfully done by Drs. Deaver and Agnew. Death occurred five days later, from exhaustion.

Dr. Deaver said: The steps of the operation were lumbar incision, which exposed the kidney closely adherent to parts, especially to the under surface of the liver and to the iliac vessels. It was distended with pus, six ounces being evacuated prior to its removal. The mass was very large, and in delivering without wounding the peritoneum required great care. I now regret that we extirpated, as I believe it would have been better surgery to incise the kidney, wash out the abscess cavity, insert a drainage tube, and to dress it antiseptically as in nephro-lithotomy.

Much difficulty was experienced in ligating the pedicle, as in Dr. Price's case. I believe the abdominal incision to be preferable in dealing with greatly enlarged kidneys. In performing the abdominal operation, the meso-colon descending, instead of the internal meso-colon, carries all the blood-vessels, should be divided, thus avoiding the danger of gangrene of the gut. Delivery is easier, and better access is given to the adhesions, especially those to the iliac vessels.

DR. J. B. ROBERTS said: The case of Dr. Woodbury suggests some studies I made and reported to the American Surgical Association a few years ago. Something can be gained in the way of diagnosis in the early stages of peri-nephritic abscess and other lesions in this region by the study of certain trains of symptoms, pointing to the localization of the disease. Inflammatory affections about the upper end of the kidney, for example, will often show on careful examination a limited pleuritis; when the lower part is involved there is apt to be spasm of the psoas muscle with flexion of the thigh; in the middle part pressure on the renal vein and other vessels may cause an otherwise inexplicable albuminuria.

DR. C. B. PENROSE presented a specimen of

DERMOID CYST OF THE OVARY,

which he had removed two days ago. The woman also had a uterus filled with many subperitoneal and interstitial fibroids, and a large blood cyst of the other ovary.

DR. PENROSE reported a case of

OBSTRUCTION OF THE BOWEL BY CANCEROUS MASS; OPERATION; WITH FORMATION OF ARTIFICIAL ANUS.

The operation was performed seven days ago. There had been complete obstruction of the bowel for twenty-eight days prior to operation. Fecal vomiting occurred two days before operation. At time of operation there was immense abdominal distension, a temperature of 101°, and a pulse of 150. An abdominal incision four inches in length was made, revealing complete occlusion of the descending colon by a cancerous mass twelve inches long, involving also the meso-colon.

Resection was made of the gut and meso-colon, and all indurated tissues removed. The two ends of the divided gut were brought together laterally and united to each other, and the long axis of the abdominal incision, with continued suture, so as to make an artificial anus. A bucketful of fluid feces was discharged immediately after the operation. Relief was immediate; quiet sleep lasted for thirty-six

hours. To-day the abdomen is flat; the pulse is 80 to 90; temperature 99°; there is no pain; the tongue is clean; appetite good, and the patient doing remarkably well.

Stated Meeting, February 22, 1888.

W. W. KEEN, M.D., in the Chair.

DR. W. W. KEEN, read a paper on

A CASE OF MACEWEN'S OPERATION FOR THE RADICAL CURE OF HERNIA, FOLLOWED BY A SPEEDY RETURN OF THE HERNIA.

I think it important to report failures as well as successes. Macewen's operation, also, has been so generally successful that it is the more important to report the failure of this case as the immediate result of the operation seemed to promise a cure; but, as you will see, the hernia has quickly reappeared. For the notes of the case I am indebted to Dr. Lambach, the Surgical Resident.

The patient is a man 32 years of age, a fresco painter, but for some time at work dredging oysters. When 17 years old he first noticed a right oblique inguinal hernia, for which he wore a truss for a year and then laid it aside. The hernia remained cured for thirteen years. A year ago, while at work dredging for oysters, the hernia returned, and descended into the upper scrotum. He entered St. Mary's Hospital January 6, 1888, on account of the distress and inability to pursue his occupation. The operation was done on the 13th; on the fifth day I removed five of the nine external stitches, and on the twelfth day the remaining four. There was no pus at any time. The highest temperature was 100.2°. He had then two chills, the first on the fifteenth day, his temperature rising to 103°; but as there was no evidence of suppuration, as it yielded promptly to quinine and arsenic, and as his occupation had exposed him to miasmatic infection, we were justified in attributing this to malaria. He was kept in bed for twenty-nine days—*i. e.*, until February 11. At this time I examined him, and found the hernia perfectly cured. He was then allowed to get up, a spica and compress being applied. Examining him yesterday, (February 21), I found the hernia had returned, with, however, one gain—at the time of the operation the external ring was very large, requiring four double sutures. Now it will only admit the point of the index finger. Moreover, he is exceedingly comfortable, so much so that I doubt if I can persuade him to undergo another operation.

An incision was made over the site of the hernia to its lowest point in the scrotum. With the blunt end of the scissors and the finger, the sac was then dissected from the surrounding parts, care being taken to leave no attachment to the spermatic cord. The index finger then was passed within the abdominal wall, and the peritoneum was dissected for half an inch around the circumference of the internal ring. A moderately stout ligature of chromicized catgut was tied to the lower part of the sac, and a series of stitches taken from the lower portion of the sac to its mouth. This stitch, by means of Dr. Ellwood

Wilson's curved trachelorrhaphy needle, was then passed through the abdominal wall from within outward at a point a half inch above and external to the internal ring, the skin being drawn upward and outward so as to allow the stitch to emerge through the abdominal muscular wall, but not through the skin. Then traction was made on this stitch, thus puckering up the sac, which latter was drawn through the ring and rested against the inner surface of the abdominal wall to become adherent there, closing the hernial opening by a firm pad. The stitch was then secured in place. The external ring was then closed by four double stitches of chromic catgut, passed from side to side. I was extremely careful in denuding the inner surface of the abdominal wall to get a large raw surface at the internal ring, so as to gain firm union at that point; and the patient was kept on his back for four weeks; yet it gave way a few days after letting him up. I shall repeat the operation if he is willing.

DR. H. R. WHARTON: I have no personal experience with Macewen's operation for the radical cure of hernia, but I have seen two cases in which Agnew's operation was employed, and three or four in which McDowell's method was resorted to; these are subcutaneous operations, and do not compare with this open operation in thoroughness. The immediate results seemed good in the cases referred to, but in a short time the hernias were down again. Recent reports from England, though still too recent to allow us to estimate the permanency of the cure, are very encouraging. As to Macewen's operation, I think it one of the best that has been proposed, and if any radical procedure is to be undertaken it seems to promise the best results. Of course, any operation is more apt to be successful in children than in adults.

DR. C. DULLES: I would like to ask Dr. Keen if any appliance other than the bandage was used after the patient began to go about. The hernia looks as if it had been down some time, and not as if it had descended recently. I think it would be best not to trust solely to the strength of the tissues for a little while after the operations. There is a point in the mechanics of hernia that I have noticed, and which I have not seen described by others, and that is, that a patient with an inguinal hernia usually has a pendulous abdomen. I was curious to see if this spare patient of Dr. Keen's would follow the rule, and I saw that he did. I may lay too much stress upon the matter, but I believe that the best appliance is not one that makes pressure over the ring alone, but one that corrects this abdominal outline, and changes the direction of the thrust of the intestines from one at right angles to the plane of the hernial opening to one parallel to its plane. Such an abdominal supporter as women wear would answer the purpose, and I believe it would add to the chances of permanent success after operations for the radical cure of hernia.

DR. KEEN: Of the cause of failure, I can only say that apparently the reparative power did not suffice to obtain adhesion of the sac to the abdominal wall. Why, unless the two chills referred to

had some influence, I do not know. The usual practice of those who have had a large experience with these operations has been not to use any truss. I cannot agree with Dr. Dulles. He is right as to the shape of the abdomen, and in correcting it to a more oblique outline, but the pressure will always be at right angles to the abdominal walls anteriorly, and not down into the pelvis. That would, however, correctly express the direction of the rebound. As to the exact time when the hernia reappeared I cannot say. When I examined him, February 15, four days after letting him up, it was not there. I did not see him again until February 21, when I found it had reappeared. I shall not wait long before repeating the operation. He wants to be earning wages, and I do not want to burden the hospital with any patient longer than necessary. Any danger will have passed over in a week or two, and I will then operate if he consents.

DR. DULLES: When we bear in mind the comparatively mobile state of the contents of the abdomen, we must see, of course, that the intra-abdominal pressure is exerted in all directions, and we might draw any number of arrows to indicate it; but there is only one direction of "*thrust*," which is the resultant of all the lines of pressure; and by supporting the abdomen, as I suggest, by a firm and comparatively unyielding support, we turn the direction of that thrust into a line following the axis of the pelvis, and take it off the ring.

CLINICAL SOCIETY OF MARYLAND.

Stated Meeting, February 3, 1888.

THE PRESIDENT, N. G. KEIRLY, M.D., IN THE CHAIR.

DR. HIRAM WOODS reported

THREE CASES OF HALLUCINATIONS DUE TO THE ADMINISTRATION OF SODIUM SALICYLATE.

The power of sodium salicylate to relieve the pain and shorten the duration of some of the intra-ocular inflammations is now, I think, generally recognized. Iritis and choroiditis are the inflammations specially amenable to this treatment. Nor is its good action limited, as might be supposed, to these cases having a rheumatic origin. Iritis, clearly due to syphilis, without the least suspicion of rheumatism, I have frequently seen quickly relieved by the salicylates. Mercury will cure in time, of course; but the salicylates seem to have the power of aborting the attack.

To accomplish this result, the system must be speedily brought under the influence of the drug, and this requires large doses. This fact gives us a clue to its mode of action. Large doses of the salicylates have the effect of weakening the heart's action, and reducing the blood-pressure. These results are brought about by the combined depression of the contractile force of the cardiac muscle, and of the vaso-motor centre. The latter produces not only a fall in blood-pressure, but prevents a rise in the pressure when the sensory nerves are irritated (Brinton, *Materia Medica*). These facts place

sodium salicylate—if given in large doses—among the antiphlogistics, with aconite, veratrum, large doses of quinine, etc. Still, I can hardly believe that all the antiphlogistic effects of the salicylates are due to their depressant action on the circulation. Other drugs which lower the blood pressure—for instance, the bromides and those already mentioned—do not sensibly relieve the pain nor affect the course of iritis. There seems to be a selective action which we little understand. The large doses required often produce effects which are not only disagreeable, but may, in exceptional cases, become dangerous. Nausea, tinnitus aurium, deafness, fullness in the frontal region of the head, wakefulness are the symptoms commonly met with. The amount which will produce these physiological effects usually stops the inflammation, or by its failure, induces us to use other means. More rarely, violent purging, involuntary evacuations, great dyspnoea and collapse are observed (Bartholow). Professor Chisolm, of this city, reported two or three years ago a case of purging and involuntary evacuations occurring in a patient, who took, through a mistake of the druggist, 192 grains instead of 24. There were, in addition, marked depression and weakness, but the patient fully recovered in two days. The force of the drug is sometimes expended wholly upon the nervous system. Such extreme effects as complete deafness, ptosis, strabismus are mentioned in our text-books as having been occasionally observed. Bartholow mentions a case of amaurosis due to the administration of 125 grains. There was no retinal lesion. Delirium and visual hallucinations are nervous phenomena more commonly observed than those just mentioned. Brinton says: "Salicylate of sodium in some persons tends to cause most disagreeable visions, whenever the eyes are shut, and I have seen it have this effect even in such a small dose as 5 grains" (*Materia Medica*). According to Bartholow, it is specially apt to produce delirium in drunkards. In the *British Medical Journal* of January 29, 1881, Dr. Bastian presents a series of five cases of delirium and visual hallucinations following the use of sodium salicylate in acute rheumatism. One case was that of an old toper, and the character of the delirium was similar to that of delirium tremens. In another the rheumatic poison seemed to be specially virulent, and the delirium was more like that sometimes observed in acute rheumatic fever, and due only to the rheumatic influence. Dr. Bastian concludes that if the patient's condition is such as to predispose to delirium, the salicylate will probably precipitate the attack, which, in its characteristics will resemble the delirium occurring in the predisposing disease. Cases, however, are here and there recorded in which, like those immediately to follow, there was no pyrexia to produce the trouble, nor any influence which could be held responsible except the salicylate.

Case 1.—Mr. J. S. age 43, occupation journalist, consulted me April, 1886. He had had iritis in the right eye for four days. The iris was muddy, the pupil contracted, the periphery of the iris bulged forward, and there was pus in the anterior chamber. Pain was intense not only in the eye, but in the

temple. There was no syphilis, but an attack of rheumatism three months previous to his visit to my office, seemed to offer an explanation for his iritis. There was, so far as I could make out, no organic heart trouble. He gave a distinct history of phthisis in the family, and while I could not find a cavity in either lung when I examined him, there was dullness over the apices of both lungs, there was considerable emaciation, and he had a cough which was sometimes very troublesome. I have not seen him since I discharged him in the spring of 1886, after his iritis had gotten well; but he wrote me, from his home in Baltimore County, during the past winter that he had been obliged to give up nearly all his work, that his cough was incessant, and he was growing weaker. Undoubtedly he has fallen a victim to phthisis. His habits were temperate. He said he usually took a glass of sherry with his dinner, and sometimes, a little whisky at bed time. I applied a compress bandage to his eye, ordered the instillation of a 4 grain atropia solution, and prescribed for him 20 grains salicylate sodium every four hours. When he called at my office the next day, I was engaged, and he sat in the waiting-room about half an hour. After I had examined his eye, finding it greatly improved, he asked: "Doctor, is there a big colored woman with a child on her lap sitting on the sofa in the other room?" I told him I didn't think there was, but to satisfy him, I looked and found none there. On learning this, he said: "I wasn't *sure* of it. I didn't see her until I had been in the room a little while, and then she wasn't clear enough to make me sure." On questioning him, I found he had, to settle the question in his own mind, gone up to the sofa, and tried to touch the supposed woman, and found his hand came down upon the sofa. He then told me that he had taken four of the powders between 10 A.M., and 10 P.M., the day before, making 80 grains in all. He retired about 10 o'clock, and did not take a stimulant that night. After being in bed a little while he noticed his ears buzzing. He could not sleep, and soon thought he was having a dispute with his son. He sat up in bed, made up his mind that it was all imagination, laid down again, and talked away at his son as much as ever; so much so that his wife asked him to stop talking. After awhile the delirium changed and he thought he was at the telephone in his office, and couldn't speak above a whisper. He got out of bed two or three times during the night to answer a supposed telephone call. In the morning, while coming to town in the cars, he was troubled by seeing a black cat on his knee. He could convince himself that these things were all hallucinations; but no sooner would he do this than they would all come trooping back as real as ever. When standing alone he suffered from giddiness. His pulse was about 80, temperature normal. I had him pass his urine in my office, and found it free from albumen. The salicylate was stopped. He slept very little that night, but the next day seemed completely himself. The iritis was afterwards treated with kal. ioidid. and the alkalies.

The other two cases occurred in the private practice of Professor Chisolm, who has kindly written out for me the following notes:

Case 2.—L. G., aged 50, of temperate habits, has been for ten years troubled with repeated attacks of specific iritis. Each attack runs its tedious course of six weeks or two months under the orthodox treatment of iod. pot. and mercury with the local use of atropia and an occasional application of leeches to the temples. Four years since the treatment was charged to the salicylate of sodium in 25 gr. doses given four times a day. The drug alleviates very promptly the inflammatory attacks and enables him often to get out in a fortnight—a marked shortening of the paroxysm. In his case the remedy is not without its detractions. It does not disturb very materially his digestion, but when continued for some days produces very curious psychological effects. By the fourth day of taking, particles of dust become conspicuous against white surfaces and pollute the water which he drinks. The particles covering his white bed-spread grow in size into green flies, and some of these develop into green frogs, with a few green snakes. They are not stationary but are in constant motion. He knows them to be an illusion, but they look very real notwithstanding. If the medicine is stopped at this stage of the mental disturbance in twenty-four hours they are all removed, disappearing in the transition forms in which they introduced themselves. Should it be needful to continue the large doses of the salicylate, figures of men, not always with the most pleasant countenances, appear on the scene. At one of my morning visits my patient reported his night's sleep much disturbed by the intrusion of three men into his chamber. In waking, by the dim light of the turned down gas, he saw three men inspecting his box of valuable papers, which they for convenience had transferred to a side table. He reasoned with himself that no one could get into his house, and that his body-servant was in the contiguous room. He could shut out the vision by closing his eyes. At my visit he was sitting facing an open door leading into the next chamber. After describing his visions of the previous night, he said, "Now I know perfectly well that there is no one in that room, pointing to the door, and yet there stands in a threatening attitude a big man with an ugly club. I can shut him out by shutting my eyes, but there he is all the same."

On another occasion, after using the salicylate for some days, with the recurrence of moths, then flies, frogs and snakes, always green ones, I found him at midday sitting in the dining-room. As soon as I had examined his eyes and found that the injection had nearly disappeared he said that he was very glad of it, and could now stop the sodium because the hallucinations were becoming annoying. Just before I had arrived, a mouse had come out from under the grate. After playing about on the rug it commenced to puff up and became a cat. The inflation continued, the animal becoming larger, until it assumed the appearance of a tiger, upon mischief bent. When the animal crouched with the intent of springing toward him he asked his mother, who was reading the morning paper at the window, to come toward the fireplace. In doing so she got in between himself and the threat-

ening animal, and the illusion vanished. During these conditions of mental excitement the reasoning powers were never disturbed, nor did the conversation at any time indicate otherwise than a clear head. In this case the physiological influences seemed always to run in the same channel. These experiences had occurred to him on several occasions at many months of interval, and always in a regular order. After three or four days taking large doses of the salicylate he would mention to me: "Doctor, I saw the little pieces of stick in my basin this morning; the flies will come before the day is out."

Case 3.—Miss S., aged 50, had been operated upon for double acute glaucoma. Vision had been reduced to light perception before operation, and was so perfectly restored that she could use her eyes for hours daily in confined literary pursuits. Four years after the iridectomy, her left eye was attacked with a sharp inflammatory attack, which she conceived to be a return of her glaucomatous trouble. I saw her after three days of suffering, and found an acute attack of iritis, with some pus in the anterior chamber, a heavy rim of injection around the cornea, a very painful eye with very dull vision. The salicylate of sodium was given in 25 gr. doses, four times a day. By the second morning all congestion had disappeared. The media had cleared up in a wonderful manner, and vision had returned. She stated that she had had a most horrible night of hallucinations of most disagreeable forms. She was very glad to know and feel that the eye was so very much better. She had made up her mind, from the horrors of the preceding night, that she could not take another dose of the medicine, even if the safety of her eye depended upon it.

In my own case, and the last of Prof. Chisolm's, the delirium came on during the first ten hours of the administration of the drug. In the *Practitioner*, for May, 1882, Dr. C. S. Coulston publishes an interesting and exhaustive thesis on "The Use of the Salicylates in Rheumatism." Speaking of this delirium, he says that it usually comes on within the first eight hours, and is due to overwhelming the nervous system with large doses before tolerance is established, which can be readily done. If tinnitus aurium appears, the salicylate, Dr. Coulston thinks, should be discontinued until the tinnitus has gone. Then the salicylate can be given with freedom. Each of the five cases reported in the *British Medical Journal* by Dr. Bastian afterwards took the medicine without trouble. In the extremely interesting case (the first narrated by Prof. Chisolm), the medicine seems to be well borne for three days, and then the delirium comes. Tolerance is not established. This case also opposes the remark of Brinton's that the hallucinations only appear when the eyes are closed. In each of these cases there was full knowledge that the objects seen were hallucinations, but they could not be permanently driven away. The patients were, on this account, not greatly terrified. Dr. Coulston states that the hallucinations are usually of a harmless, non-terrifying character. One of his patients insisted that a bundle of rags in the corner was the baby of an intimate friend, and he had

to take care of it. Occasionally, however, the delirium takes the form of mania, and the patient is violent.

In those diseases which sometimes of themselves cause delirium, the question of diagnosis becomes an interesting one. Dr. Coulston shows that the salicylic delirium is to be distinguished from that due to the rheumatic influence by the absence of fever and lessening of the joint pains at the time the delirium occurs. This was so with his cases, and with those reported by Dr. Bastian. The latter gentleman quotes the observation of Simon, that delirium in rheumatism means involvement of the heart, and this may throw doubt on the influence of the salicylate in causing the hallucination. In three of Dr. Bastian's cases there was no heart complication at all. From the delirium of drunkards (delirium tremens), it is to be diagnosed by "the absence of tremulousness in the hand or tongue."

The manner of the production of the delirium is also an interesting question. As some of the cases also showed albuminuria, it was supposed that acute nephritis had resulted from the use of the salicylate, and that uræmia had caused the delirium. Subsequent cases have disproved this. In only one of Dr. Bastian's cases was there albuminuria. Dr. Ackland, quoted by Coulston, "thinks that uræmia, due to the great diminution of the amount of urea excreted by patients taking salicylates, may be an important factor in the production of the delirium. Dr. Bastian's opinion—that it precipitates an attack of delirium impending from some other disease—has already been alluded to. By others the delirium has been supposed to be due to impurities in the salicylate, and it is asserted that the *pure* salicylate never produces delirium. Dr. Coulston concludes his study of this branch of his subject with the remark: "The direct action of the salicylates on the nervous system is sufficient to account for the delirium, apart from either albuminuria, uræmia, or the rheumatic complication, though . . . those would be predisposing causes."

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Albuminates in Medicine—A Large Lee Refused—Diagnosis and Treatment of Ruptured Intestine without External Wound—Sanitary Registration of Buildings—Increase of Population of England and Wales—Cremation in England.

The albuminates are a class of medicine which is coming into extended use, and one of the most highly spoken of, in therapeutical value, of the preparations of iron, is that which falls into this category. In Germany albuminate of iron has already been successfully introduced into medical practice and will doubtless sooner or later be put upon its trial in this country also. The particular preparation which has been received with such favor is that known as liquor

ferri albuminatic "Drees," which besides the advantage of being less unpleasant to take than any other iron compound is also preëminent in the readiness with which it is absorbed from the circulatory fluids. The following formula at present is found to be the most suitable. Of dried egg albumen 2.5 parts are dissolved in 30 parts, (all, including the following, by weight) of cinnamon water, forming solution No. 1. Then 12 parts of liquor ferri perchloride are diluted with 40 of water and 12 of spirit, forming solution No. 2. These two are then mixed together, shaken, and $\frac{1}{2}$ a part each of liquor ammonia and liquor soda immediately added. The whole is thoroughly agitated until completely mixed. The product is a reddish brown, somewhat oleaginous looking liquid with a sweet taste and a slight alkaline reaction. It is miscible with all proportions of water, and with milk, or other albumen rich fluids, without precipitation. The former liquid forms a suitable vehicle for its administration, and the dose is from one to four teaspoonfuls several times a day. Prolonged boiling will not separate the albumen of the preparation.

The fee of £6000, which it is stated Sir Morrell Mackenzie has been offered to go to America to see a patient, is probably the biggest thing in the way of a single fee that has been heard of in these days. Sir Morrell himself got £1000 for going to Cannes to see Mr. Stirling Crawford, and Dr. Hahn had the same amount for coming from Berlin to Mr. Montague Williams. Sir Henry Thompson received £2000 (of which he returned half) once, but these are trifles compared with the fee Mackenzie has declined.

Speaking at the London Clinical Society upon the diagnosis and treatment of ruptured intestines without external wound, Mr. Mayo Robson said that in some cases of ruptured intestine the symptoms were so distinct as to be pathogenic, that other instances of abdominal injury might present most of the signs of ruptured intestine and yet recover, the shock being due to disturbance of the sympathetic nervous system, and the liver dulness diminished by distended intestine, that the usual symptoms might be entirely absent for a time, only becoming evident after some hours, and that a failure in diagnosis might occur from injury to other regions taking the attention from the abdomen. With regard to the diagnosis Mr. Robson considered the signs and symptoms separately, and then collectively, remarking on the variability of the cause, the difference in the degree of shock, the usually rapid and feeble pulse, the constant presence of vomiting and pain, and later the usual signs of peritonitis, but especially dwelling on the importance of altered liver dulness, which when normal was almost proof of absence of perforating wound of alimentary canal, when diminished was suspicious of perforation, but when absent was almost pathogenic of rupture. He considered the symptoms most to be relied on were shock, more or less severe, following immediately on an accident, pain in the abdomen, moderately quick and flabby pulse, vomiting of contents of stomach, followed by bilious vomit, anxious countenance and diminished or absent liver dulness. Mr. Robson remarked that no reliance could be placed upon the expectant treatment, and

that the only hope of success lay in early operation. For his own guidance he had adopted the following rule: In cases where there was a reasonable belief that the intestine was wounded, as evidenced by the history, symptoms and signs, exploration by a small median incision must be made, when if there were any rupture of the bowel, flatus or serum, tinged with blood or purulent material, would escape through the small peritoneal opening which could then be enlarged and necessary treatment adopted; but should no flatus or fluid appear and the peritoneum prove to be healthy, the small wound could be closed and no harm would have been done.

A Conference has been held at the Society of Arts, under the Presidency of Sir Joseph Fayrer, to consider the sanitary registration of buildings, with special reference to the bill which is to be promoted in Parliament during the coming session. In the course of a paper the objects of the bill were defined as (1) to seek to protect the community against the unsanitary conditions in public and semi-public buildings; and (2) to encourage attention to the sanitary state of private dwellings. Dr. Brudenell Carter moved a resolution declaring the expediency of a compulsory inspection of all public and semi-public buildings with a view to their being properly certified by a competent authority as fulfilling the requisite sanitary condition, and also advocating the establishment of a public sanitary registration office. The resolution was unanimously carried.

The Registrar-General's returns for 1887 show that the increase of population of England and Wales during the year, as estimated by the excess of births over deaths, was 355,440. This is 11,000 less than the increase of the previous year, showing that the falling off in the rate of increase is not only maintained but has even been accelerated. According to the rate of increase from 1871 to 1881, it should have been 23,669 more for 1887 than it actually has been. According to the Board of Trade returns, the emigrants from the same portion of the United Kingdom numbered 172,324, thus leaving a net increase in our population of 183,106, without allowing anything for immigration. The death-rate last year was 18.8, a figure which is less than it has ever been since the commencement of civil registration in 1837. Indeed so steadily has the death-rate declined during recent years, thanks no doubt to improved sanitation, that it is estimated that England and Wales contained at the end of last year more than 400,000 persons who would have been dead had the death-rate that prevailed from 1871 to 1880 been maintained. The total population of the United Kingdom in the middle of 1887 is estimated at 37,091,564, of which 28,247,151 were in England and Wales, 3,991,499 in Scotland, and 4,852,914 in Ireland.

Cremation in England, according to the returns of the Cremation Society, appears to be gaining in favor, as during the present year they have cremated five bodies at their working crematorium. In the case of a child eight months old, the ashes weighed only eight ounces. Up to the present time thirty-one cremations have occurred at the Society's crematorium.

G. O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Relations of Summer Diarrhoea and Cholera Infantum to the Weather—Hospital Saturday and Sunday Fund.

At the last meeting of the Academy of Medicine in February Dr. A. Seibert read a paper on the relations of cholera infantum and summer diarrhoea to the weather, which showed a most commendable degree of industry in its preparation. These statistics bring to light a number of interesting points, some of which are in opposition to the views generally held by the profession and the laity; but it is to be noted that exception was taken to some of his conclusions by the speakers who took part in the discussion on this occasion.

The paper was based upon observations made during a period of ten years, extending from January, 1878, to January, 1888, in the children's department of the German Dispensary of this city, and was illustrated by a large number of charts. The cases studied included, he said, all those of acute gastro-intestinal catarrh, occurring in children under the age of 5 years, which were treated at the Dispensary during this time. As was naturally to be expected, the largest proportion of cases occurred during the summer months and the smallest number in the winter months. His statistics, as well as those of the Board of Health, however, he claimed, showed that the disease existed all the year round (even in the coldest weather), and that the proportionate mortality was just the same in cold as in hot weather—about one case in every four proving fatal.

It was a somewhat remarkable fact, he went on to say, that the number of cases and deaths was always much greater in the month of July than in August. Thus, in the ten Julys there were 2,443 cases at the Dispensary, and in the ten Augusts only 1,524; while the number of deaths reported in the city of New York during the ten Julys was 12,428, and during the ten Augusts only 6,205. The reason for this difference, he thought, might perhaps be explained by the fact that it took a few months, after the warm weather had set in, to fully arouse the tenement-house population to the danger to which their children were exposed from this disease, and to the necessity of taking suitable precautions as regards diet, fresh air, sanitary conditions, etc., for its prevention.

During the summer months Dr. Seibert said that it was found that the number of cases and of deaths bore no relation whatever to the rise and fall of temperature, and the same was true as regards the range of humidity; so that warm moist weather did not predispose more to the disease than warm dry weather. He stated that he had also made a very thorough investigation of the effect of light and heavy rain-fall; but totally without result. Previous to this it had been a favorite idea with him that want of water on the upper floors of tenement-houses constituted a somewhat important factor in the causation of sum-

mer complaint in the city. Local rain-falls also had no effect; and the same was true in regard to the velocity of the air-current.

He believed it to be still a disputed point whether direct heat is capable of causing the disease in question; and he had accordingly made a special study of all the hot days in the ten summers—when the thermometer rose to 85° or higher. According to prevalent opinion, the months containing the greatest number of hot days ought to have had the greatest number of cases and of deaths; but he had found no evidence supporting this view. Thus, in the last two weeks of June, 1880, there was a large proportion of these hot days, and in the same period of 1887 there were but few of them; yet the number of cases was just about the same in both of the fortnights mentioned. Again, in July, 1881, when there were but few hot days, there were 290 cases, while in July, 1887, which was considerably hotter, there were only 196; a ratio of 3 to 2.

How, then, were we to account for the fact that in the warm months there are always such a large number of cases? It was evident, he said, from the facts just pointed out, that *hot* weather was not necessary for the production of the disease. In regard to *warm* weather, however, the case was different; and the statistics collected showed that in the early part of the summer season, as soon as the minimum daily temperature reached 60°, and this continued for a few days, an increase in the number of cases of acute gastro-intestinal catarrh was noticed. Furthermore, if the minimum daily temperature remained above 60° for a number of days (say for a week or more), it was noticed that the disease became epidemic. The reverse of this was noticed at the close of the warm season in October, the month of departure. During the first half of the month the minimum daily temperature usually reached 60°; but in the latter half, when the colder weather set in, the end of the epidemic occurred.

To sum up, an examination of the records of every summer month, and of every day of each month, during the last ten years, had led him to the following conclusions:

1. Hot weather, either dry or moist, is not necessary for the epidemic appearance of acute gastro-intestinal catarrh.
2. Warm weather, either dry or moist, showing a minimum daily temperature of not less than 60°, brings on the epidemic every year, irrespective of the maximum daily temperature.
3. The disease loses its epidemic character as soon as the minimum daily temperature falls below 60°, as in October.
4. Therefore, this disease cannot be brought about by the direct effect of high temperature upon the child's body.

Dr. Seibert then went on to speak of the milk that furnishes the principal food of so many young children. It was often carried long distances, he said; being much jolted about, and absorbing impurities from the time it left the cow. It was, therefore, only a question of how far the decomposition of the milk had advanced by the time it was consumed by the

child. It was well known that a low temperature retarded decomposition, and Dr. Cyrus Edson, of the New York Health Department, had informed him that in his experience he had found that milk usually began to turn whenever its temperature reached 60° or higher. Chief Engineer Birdsall, of the Department of Public Works, had also informed him that whenever the temperature of Croton Lake rose to 60° or above, there was a peculiar taste to that water which he attributed to the decomposition of certain matters contained within it.

In the discussion that followed the reading of the paper Dr. L. Emmett Holt said that in summer there were different forms of diarrhoeal disease in young children, and that he thought it advisable that some distinction should be made between them. In the production of what is ordinarily known as summer complaint he believed that there were four principal factors concerned, viz.: 1, heat; 2, feeding; 3, sanitary conditions; and 4, constitution; and that the most important of these factors was heat.

Dr. J. Lewis Smith said that he quite agreed with Dr. Holt as to the importance of distinguishing between the different forms of disease met with. He had seen cases in the warmest weather in which an aggravation of the symptoms resulted from reduction of temperature. The child took cold, and the disease was then apt to assume a dysenteric tendency. He thought there was perhaps a fallacy in comparing summer diarrhoea with the diarrhoea met with in cold weather, as he believed the latter to be an entirely different affection from the former. In the cooler months the causes of the trouble were usually so different that it was unjust to classify the two diseases together, although the lesions might be the same. The difference between the two was as great as that between the bronchitis incident to pertussis or measles and idiopathic bronchitis.

It seemed to him, also, that one might be misled by the number of deaths reported. Thus, many of the deaths occurring in August or September might be children who had contracted the disease in the earlier part of the summer. The mortality, as a rule, was somewhat greater in September than in May, although the temperature was usually higher in the latter month than in the former; and the reason was because many of those dying in September had been taken ill in one of the previous months.

It could be stated in a general way, he thought, that the disease known as summer complaint was caused by heat; but in what way the heat operated to produce it was not as yet clearly ascertained. It was evident that heat alone was not sufficient for its production, or else the disease would be found prevalent in the country as well as in the city. It must be a fact, therefore, that there were certain causes which were brought into operation by the unsanitary conditions met with in the city in hot weather; and the opinion was gaining ground among the best observers that summer diarrhoea is a microbic disease. In Asiatic cholera, the causative agency of Koch's bacillus had been pretty generally accepted, and it was believed that this micro-organism was received through the mouth and acted as a source of irritation

to the intestines by its actual presence, and not by causing decomposition of food. In like manner, it did not seem unreasonable to suppose that microbes might act in the same way in some cases of summer diarrhoea.

Dr. Caillé said that, in his opinion, decomposing milk was the chief exciting cause of the trouble. He believed, also, that high temperature sometimes does have a pernicious effect upon the human body, and thus serves to pave the way for some agency which will give rise to the diarrhoeal trouble. It was a fact that children nursed at the breast, or brought up on some of the numerous infants' foods in the market, who never get cow's milk, will sometimes be attacked with serious gastro-intestinal disease if allowed to overload their stomachs in hot weather, while they will suffer but little, if at all, under the same circumstances in cold weather.

He then quoted some experiments made by two French physiologists on animals exposed to a continued temperature of 104°, in which the phenomena observed to result from this exposure were: 1, increase of nervous excitability; 2, nervous depression; and 3, convulsions, coma and death. The same results, he said, had been noticed to be produced in children when the weather was very hot. It was his opinion, therefore, that while high temperature did not directly produce diarrhoea, it did have a pernicious effect upon the system, and under these circumstances any irritating substance would be likely to give rise to diarrhoea.

As regards the smaller number of cases of summer complaint, as well as of deaths from the disease, in August than in July, he thought that perhaps one reason for this was that a much larger number of children left the city in August than in July, while those which remained had the advantage of the numerous fresh air excursions then provided for the poor.

The President, Dr. A. Jacobi, said that there was a great difference in the cases observed. The larger number were of a simple catarrhal nature. In others, where the discharges were serious in character, there was a tendency to collapse. In such cases the lesions found in the intestines after death might be very slight, while several of the organs of the body might be found to be in an advanced stage of granular degeneration. He believed that great heat would kill by its direct effect upon the muscular system, including the tissue of the heart itself; the high temperature having the effect of coagulating the myosine of the muscles. Intense heat also had a certain influence on the surface of the body, causing an immense dilatation of the blood-vessels. Insufficient nutrition, particularly of the brain, would result from this, and thus collapse would be brought about. These were the cases of true cholera infantum, which generally terminated fatally, and which were liable to be met with in well-to-do families as well as among the very poor. The large majority of the cases met with, however, were of gastro-intestinal catarrh.

Dr. Jacobi said that he had been much interested in the fact demonstrated by Dr. Seibert's investigations, that 60° was the turning-point for this disease,

and it was especially noteworthy in this connection that Dr. Edson had expressed the opinion that milk began to decompose, and Chief Engineer Birdsall the opinion that water began to be affected by decomposition, also at 60°. In conclusion he made some remarks in regard to the importance of proper feeding.

The annual collection of the Hospital Saturday and Sunday Association amounted this year to the handsome sum of \$50,408; which, notwithstanding the withdrawal of the Presbyterian Hospital from the Association, renders it possible to distribute among the hospitals entitled to a share of the undesignated contributions some \$6,500 more than last year.

P. B. P.

NITRITE OF AMYL IN DYSPNOEA.

Dear Sir:—THE JOURNAL of January 21 contained an editorial comment on the use of "Nitrites in Asthma," as observed by Professor Fraser, of Edinburgh, wherein it was stated that the nitrite of amyl, formerly given by inhalation, produced the same effect with much longer continuation when given by the stomach.

At that time I had a patient with Bright's disease, who suffered most agonizing paroxysms of dyspnoea—they were simply terrific, notwithstanding the use of ordinary measures. There was no asthma whatever. On the recurrence of an attack, after reading the editorial, I gave 3 drops of nitrite of amyl in a teaspoonful of brandy without expecting much result, but simply as a *dernier ressort*. The result was simply miraculous! It was almost instantaneous. From a sense of impending suffocation the patient began to breathe perfectly freely in less than five minutes. This relief lasted for upwards of twelve hours, when the same quantity was repeated on the recurrence of another attack, with the same result, and without increasing the dose. The nitrite was given on every recurring attack until the attacks finally disappeared, and for several days the patient has had no dyspnoea whatever. The original disease, however, is unaffected by the nitrite.

Now, while I am free to admit that one swallow doesn't make a summer, and while I know that this remedy is not especially recommended for the dyspnoea of Bright's disease, still, I have seen enough of its effects in this case to make me wish that I could tell my experience to the whole profession at once.

E. B. WARD, M.D.

Laingsburg, Mich., February 18, 1888.

ASSOCIATION ITEMS.

SECTION OF OPHTHALMOLOGY, OTOTOLOGY AND LARYNGOLOGY.

Members of the Association who contemplate contributing papers to this Section are requested to send the titles of the same, as soon as possible, to the Chairman of the Section, Dr. F. C. Holtz, 103 State Street, Chicago, Ill. The following papers are al-

ready promised for the approaching meeting of the Section:

"Gummata of the Ciliary Region," by Dr. S. C. Ayres, of Cincinnati.

"The Advantages of Leaving One Eye Open during the After-treatment of Cataract Cases," by Dr. J. J. Chisolm, of Baltimore.

"Melanotic Disease of the Conjunctiva and Episceral tissue, with Five Illustrations," by Dr. Rob. Sattler, of Cincinnati.

"On Nutrition, or the Constitutional Treatment of Diseases of the Ear," by Dr. Laurence Turnbull, of Philadelphia.

"The Bongie in Catarrhal Inflammations of the Middle Ear," by Dr. W. Chatham, of Louisville.

"Reflex Nasal Cough, with Report of Cases," by Dr. Max Thorner, of Cincinnati.

"An Interesting case of Fibroma of the Larynx," by Dr. Jos. Eichberg, of Cincinnati.

"A Plea for the Better Recognition of the Oculist in the Service of the U. S. Pension Department," by J. W. Wright of Columbus.

"The Treatment of Strabismus due to Paralysis or Extreme Over-correction with Loss of Motion," by Dr. A. E. Prince, Jacksonville, Ill.

"Illustrative Points in the Examination of the Nose and Throat," by Dr. Carl von Klein, of Dayton, Ohio.

"Binocular Astigmatism," by Dr. H. Culbertson, of Zanesville, Ohio.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM FEBRUARY 18, 1888, TO MARCH 2, 1888.

Lieut.-Col. Edward P. Vollum, Surgeon, granted leave of absence for four months, with permission to go beyond sea and to apply for an extension of two months. S. O. 41, A. G. O., February 20, 1888.

Capt. E. F. Gardner, Asst. Surgeon, granted leave of absence for one month and twenty-one days. S. O. 41, A. G. O., February 20, 1888.

APPOINTMENT.

Paul Schillock, to be Asst. Surgeon, with the rank of First Lieut., January 31, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MARCH 3, 1888.

Surgeon T. C. Heyl, orders to the receiving ship "St. Louis" revoked.

Surgeon C. H. White, present duty continued to October 1, 1888.

Surgeon T. H. Streets, ordered to the receiving ship "St. Louis."

Surgeon M. C. Drennan, ordered to the receiving ship "Vermont."

Surgeon G. R. Brush, detached from the receiving ship "Vermont," and to the "Pensacola."

P. A. Surgeon Victor C. D. Means, detached from Naval Hospital, New York, and to the "Pensacola."

Medical Inspector A. A. Hochling, detached from the "Pensacola" and wait orders.

P. A. Surgeon G. E. H. Harmon, detached from the "Pensacola" and wait orders.

P. A. Surgeon J. M. Edgar, detached from the "Pensacola" and wait orders.

Journal of the American Medical Association

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

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CHICAGO, MARCH 17, 1888.

No. 11.

ORIGINAL ARTICLES.

THE PATHOLOGY OF HAY FEVER.

Read in the Section on Psychological Medicine and Nervous Diseases, Ninth International Medical Congress.

BY S. S. BISHOP, M.D.,

OF CHICAGO.

SYNONYMS: Nervous catarrh; nervous coryza; hay asthma; rose cold; June cold; July cold; peach cold; summer catarrh; autumnal catarrh; pollen poisoning. Latin equivalents: Catarrhus æstivus; coryza vaso-motoria periodica. French equivalents: Catarrhe d'été; catarrhe de foin. German equivalents: Frühommer-catarrh; Heu-asthma. Italian equivalent: Asma dei mietitori.

Goethe has tersely said: "If a man write a book let him set down only what he knows." In medical literature there is much writing of the negative sort. But if a man take an inventory of his mental stock he is forced to admit that a large percentage of it consists of negations. The object of philosophy is the knowledge of phenomena in all their relations, and it cannot be attained independently of theories and hypotheses. Not less indispensable are the same methods of investigation and reasoning, and not less latitude must be enjoyed, in discussing a subject of the peculiar nature of the one which furnishes the title of this paper. One must divest the mind of preconceived opinions before it is free to apprehend causes and conditions in their true proportions and relations. Much has been written concerning biology, electricity, phrenology, magnetism; yet who has mastered the principle we call life? What Æolus restrains the electric currents of the world? Who measures the molecular activity of the brain when his own thought is evolved—labels this atom, "love," or that, "causality"? Who can define odyllic force, and the law of its operation? But, though our path is beset with discouragements, and our work of investigation is hemmed in by the natural restrictions of human thought, and the limitations of our knowledge of pathological processes, the laboratory, lens and logic may yet triumph.

The name hay fever is a misnomer. It is employed to designate a condition to which numerous other terms have been applied with equal fitness. To the array of names already in use, ill-chosen because they are misleading, I have had the temerity to add another. In a published lecture, delivered in

the Chicago Medical College in 1885, I proposed the term nervous catarrh. Since then several authors have adopted this expression. One writer, however, calls it nervous coryza; but coryza is from the Greek κόρυζα, signifying only a running at the nose, while the word catarrh, from καταρρέω, admits of a much broader application and, with properly modifying adjectives, may be used to designate affections of various mucous membranes. Coryza is a specific term; catarrh is generic, and obviously is the more correct one to characterize a disease which is not confined to the nasal cavities. Nervous catarrh is so comprehensive a term, and is so tersely suggestive of the pathology and symptomatology of certain neurotic derangements, as to be susceptible of a much larger usefulness than has been accorded it. To illustrate: There is a truly nervous intestinal catarrh which attacks and leaves a certain class of individuals of the nervous temperament as suddenly as an attack of hay fever does. I have known a musician to suffer from severe attacks of diarrhœa just previous to his appearance before an audience which he was announced to entertain. Immediately after his performance all symptoms of intestinal disturbance would vanish, only to return again at his next appearance in public. I might cite a case of an orator of the evening who was similarly afflicted. The nervousness induced by the contemplation of addressing his audience would so react on the nervous supply of the intestinal tract as to cause sudden and copious diarrhœa. No sooner would the oration be finished than all unpleasant symptoms ceased. We have nervous dyspepsia occasioned by mental emotions. A certain combination of objective and subjective causes operating on one individual produces morbid phenomena referable to the mucous membrane of the turbinated bodies, resulting in an attack of hay fever—nasal nervous catarrh. In another, the seat of the resulting manifestations will be in the bronchial mucous membrane, eventuating in an attack of asthma—bronchial nervous catarrh. In yet another, the intestinal mucous coats are the scene of this breaking of a nerve-storm, resulting in copious watery discharges—intestinal nervous catarrh. All these are undoubtedly coordinate morbid conditions of the nervous system, finding expression in exaggerated and perverted functional activity.

The pathology of this disease has been evolved from a chaotic state, in which it remained from the time of its first description by Dr. Bostock, of Lon-

don, in 1819, until the last decade. Instead of looking upon hay fever as a simple congestion or inflammation of the Schneiderian membrane, as eminent English authorities have in the past, and yet do, prominent American authors favor the neurotic theory. In this connection it is interesting to note that a recent writer for the *Lancet* treats of common nasal catarrh as a reflex neurosis and, in support of his position, adduces numerous instances in which purely nerve-remedies succeeded in arresting attacks of acute coryza.

Although I maintain that this malady is essentially due to an abnormal susceptibility of nervous tissue, I do not claim that there exists any organic lesion of the nervous centres, to which the disease is attributable. Being a functional disturbance, it never destroys life, and no opportunity is afforded the neuropathologist to make post-mortem observations. But if the affection be a reflex neurosis, can we hope for microscopy to determine with precision the condition of nervous structure which primarily constitutes the disease?

If we examine the arrangement of the nervous supply of the respiratory passages we find that it is favorable to the existence of reflex nervous phenomena. One sympathetic nervous centre, the sphenopalatine ganglion, supplies branches to the lining membrane of the nose, pharynx and Eustachian tubes. It has a motor, a sensory, and a sympathetic root. It communicates with the facial and pneumogastric nerves, thus uniting in the closest sympathetic connection the nose, pharynx, middle ear, larynx and bronchi. Furthermore, the Schneiderian membrane is continuous with the lining membrane of the nasal duct and eyelids, the pharynx, Eustachian tubes and tympana, the larynx, trachea and bronchial tubes. Ablation of the sphenopalatine ganglion sets up a severe catarrhal state of the Schneiderian membrane. A congestion once started in this structure may extend with unobstructed facility to the contiguous membranes, very like the spreading of an erysipela-tous inflammation from one area of the skin to another. But the continuousness of the membranes throughout these various organs does not satisfactorily account for all the symptoms produced in one part by impressions upon another. Certainly an inflammation in the throat may extend along the Eustachian tube to the tympanum, but there is no such reason to account for the sudden transitory tinnitus aurium which occurs in some persons immediately upon the ingestion of a draught of cold water or the inhalation of tobacco smoke, or for the cough which is occasioned by the contact of instruments with the external auditory meatus or with the inferior turbinated body or the septum nasi, or for the paroxysm of sneezing produced by irritating the scalp. All these symptoms are examples of reflex nervous impulses, and these intimate sympathetic relations between various portions of the animal economy exhibit themselves with exceptional force in patients of nervous temperament.

The theory that lesions situated in the nasal cavities may be responsible for the existence of common asthma, has lately acquired a considerable following

in America. But this is directly in the line of our reasoning, for it argues the reflex neurotic character of a disease which possesses close kinship to hay fever not only in its etiology, symptomatology and therapeutics, but in the morphology of its secretions. The manner in which exciting causes bring about attacks in hay fever is much the same as in the case of asthma. In a hay fever subject let brilliant rays of light fall upon the retina, or dust impinge upon a sensitive area of mucous membrane, and what occurs? The end organs of the sensory nerves supplying the part affected, being over-sensitive to the presence of that particular kind of stimulus, are instantly thrown into a state of intense excitation, or irritation. Immediately the impression is flashed along the sensory nerves to a nervous centre—brain or ganglion; thence, changed to motor impulse, it is switched back, on the one hand, along the vaso-motor nerves to the blood-vessels of the seat of irritation, causing dilatation, engorgement, swelling and flux; and on the other hand, along the pneumogastric and sympathetic nerves to the muscles concerned in the act of sneezing, and, through extensive sympathetic nervous relations, all the respiratory tract and its connections may participate in the disturbance and become involved in a fully developed attack of hay asthma—sneezing, coughing, wheezing, nasal flux, expectoration and lachrymation.

Thus it appears, from the manner in which paroxysms of hay fever are started and developed, that there are three conditions upon which the existence of the disease depends: First, abnormally susceptible nerve centres; secondly, hyperæsthesia of the peripheral termini of the sensory nerves; and thirdly, the presence of one of a large variety of irritating agents. Exclude one of these conditions and the paroxysms are prevented. Allay the susceptibility of the nervous centres by certain cerebral sedatives and an attack is averted or arrested. Anæsthetize the nervous supply of the over-sensitive areas and the result is the same. Remove the patient beyond the reach of exciting causes and he is as comfortable as any mortal.

Another fact in support of the theory that this is a functional disease of the nervous system is its hereditary character. I might quote many illustrative cases were there time, but three representative ones will suffice: In Dr. Morrill Wyman's family there were six sufferers from hay fever besides himself. In the family of the Rev. Henry Ward Beecher there were two besides himself, and in the family of Chief Justice Shaw there were six members who had different forms of this distressing malady. To be sure, heredity alone does not establish a neurotic character; but, taken in connection with all the other facts in the case, it is a weighty argument in support of the assertion that this is a constitutional disorder of a neurotic type.

Again, the nervous temperament is the predominating one in this class of patients—an argument which needs no elucidation. The same may be remarked concerning asthmatic sufferers, and the admitted kinship of the two diseases only serves to strengthen my position in this discussion. The periodicity of the disease points to nothing if not to

its nervous nature, for one cannot conceive how the pollen theorists, from their point of view, can reconcile this feature of the complaint with their own doctrine. Is it reasonable to assume that the pollen of various plants which give rise to attacks in different individuals will be set free to float away on their fructifying pilgrimages on exactly the same day, and at nearly the same hour, each recurring year, and that they will reach the nostrils of sufferers in their varying localities and situations and vocations simultaneously year after year? The variations that occur in the yearly advance of the seasons preclude this hypothesis. And again, the identity of the different forms of the malady strengthens the nerve theory, while it weakens the pollen argument, for it shows that the disease exists under conditions which are the least favorable to the operation of pollen; in fact, where the pollen theory is inadmissible—in the winter and spring. I do not wish to convey the impression that I undervalue the importance of pollen as an exciting cause, but I do wish to be understood as maintaining that it constitutes but one of three factors which render the existence of the disease possible.

Other arguments that may be briefly mentioned are the suddenness of the onset and disappearance of attacks; the fact that the most potent palliatives are nerve sedatives, tonics and stimulants; and that mental emotions and physical exertion may prevent or arrest paroxysms.

The chief argument urged against the nerve theory is that many hay fever patients have diseased nasal cavities. But we may say the same of that much larger proportion of our population who have no knowledge of hay fever. That we should find nasal hypertrophies, etc., concurrent with hay fever, is not surprising in this catarrh-producing climate. Indeed, the diseased turbinated tissue may be a coincidence or sequence, rather than the cause, for it is natural to suppose that years of constantly recurring attacks of even a functional disturbance of the vaso motor supply of these parts would result in a passive hyperæmia which would eventuate in proliferation of cells in the mucous and submucous tissues, and the growth of hypertrophies which might serve as a nidus for the reception and retention of irritating agents. But the argument that this condition is responsible for hay fever in infants, youths, and even in adults in whom there is no evidence of inflammatory changes before or between attacks, is not tenable. The paroxysms do not so much resemble symptoms of an inflammation as they do an irregular and explosive discharge of a superfluity of nervous force—a nerve storm, if the expression may be permitted. It has been claimed that destructive treatment of the sensitive areas in the nasal cavities would permanently cure hay fever, and many cases have been so treated by American physicians during the last three years. However, the most sanguine practitioners of this method have recently confessed disappointment at the results. Cases that were supposed to have been cured still suffer. Others are only slightly benefited, while a few are worse for the operations. So far as I have been able to obtain definite data, they demonstrate that not one-half the number treated are

claimed to be cured. This points to the fact that it is not a simple local inflammatory disease. If it were the treatment should be attended with success. For reasons which I have set forth one cannot expect this method to cure all; but, granting that it may cure many, the nerve theory would not suffer in the least by the admission, for it assumes a pathological condition of the receptive end organs of the nerves as well as of the perceptive nerve centres. Eliminate the susceptibility of either the central or peripheral nervous system, and you remove an essential element in the disease—destroy its entity. But what shall we say of that other large proportion of patients in whom paroxysms are produced by irritation of the retina, the scalp, etc., or by chilling of the skin? Are we to be logical and, reasoning from analogy, must we destroy the sensitive area, the retina, enucleate our patients' eyes, scalp or skin them? Yet, if you follow the reasoning of this school of theorists to its logical conclusion, it will lead you to this *reductio ad absurdum*.

The neurotic theory is supported by the nature of the following causes: Electric and gaslight; over-exertion; anxiety; indigestion; dampness; chills; camphor; gases; feathers; perfumes; odors from animals; dry, hot and impure air; various kinds of fruit, etc. It will be observed that pollen and dust do not necessarily enter into the causative nature of these excitants.

This theory receives support also from the fact of the excessive irritability and nervousness which patients experience just preceding and during attacks. The coördinate action of muscles is affected, and they complain of feeling jerky and ill-tempered for the time.

In studying this disease it should not be forgotten that the statements of sufferers relative to the history and phenomena of their maladies should be given greater credence than is usually accorded the assertions of other classes of patients, inasmuch as they enjoy the distinction of being superior to the average in intelligence and culture. This is far from being an idle assertion, for it voices the experience of the best authorities and is borne out by a reference to the list of membership of the United States Hay Fever Association.

I cannot consider the treatment of this subject as approaching completeness without referring briefly to two other important points. Microscopists have been recently examining the nasal and bronchial secretions from hay fever and asthmatic sufferers, with the result, it is claimed, of establishing the kinship of the two diseases by demonstrating the presence in both of products called gravel. It is believed that this so-called gravel accumulates in the secretions of the respiratory passages, and acts as a local irritant, in the same manner that any foreign body would.

The force and analogy apparent in the following facts relating to neuroses of the skin serve to emphasize the truth in the nerve theory: Intense itching over the surface of the whole body may be produced by morbid alterations in the ovaries or uterus, anomalies of menstruation, diseases of the kidneys, liver, etc. Neumann says: "There is no doubt that

a large proportion of cutaneous diseases depend upon disorders of the vaso-motor nerves which cause certain derangements of circulation in the arteries, veins and cutaneous glands. Anæmia and hyperæmia of the skin happen from vaso-motor irregularities, some from the brain, some from the spinal cord, or from the action of cold, or the electric current, etc." Now, since it is admitted that there are both immediate and reflex functional nervous disorders of the skin, with what show of reason can it be denied that there are similar neurotic disturbances of that other skin which covers the interior surfaces of the body? The latter membrane is more vascular, more delicate, more sensitive, more highly organized than the skin. It possesses susceptibility to all agents which affect the skin, and to many others besides. For example, noxious gases, to which the skin is insensible, will irritate the mucous lining of the respiratory organs. The same laws that govern the action of the vaso-motor nerves of the skin also regulate the vaso-motor supply of the mucous membranes. If itching and burning of the skin are produced by morbid alterations in the ovaries, so is pruritus urethræ produced by disease of the bladder; pruritus nasi is generally accepted as a sign of worms in children; urticaria results from irritation of the gastric or intestinal mucous membrane; so may asthma arise in the same manner or from an irritant applied to the post-nasal mucous surface; ear-cough is occasioned by contact of instruments with the skin of the external auditory canal; and hay fever paroxysms result from irritation of the retina, the upper lip or the scalp, or from chilling the skin.

Finally, all the facts in our possession force us to the conclusion that the weight of testimony is in favor of the doctrine that hay fever is a reflex functional nervous disease.

719 W. Adams St.

THE PORTAGIOUSNESS OF PHTHISIS.

*Read before the Medical Press Association, of St. Louis,
January 30, 1883.*

BY WILLIAM PORTER, M.D.,

PHYSICIAN TO ST. LUKES AND TO THE PROTESTANT HOSPITAL; CONSULTING PHYSICIAN TO THE ST. LOUIS CITY HOSPITAL, ETC.

Before entering upon the discussion of the subject proposed, permit me brief reference to the terms employed. I have chosen the word portagious because it conveys a more exact idea of the manner of transmission of phthisis for reasons hereinafter mentioned, than either contagious or infectious. In this writing the term phthisis will be used to denote that class of disease to which belongs the large majority of cases of slowly progressive pulmonary inflammations, *i.e.*, chronic tubercular phthisis.

Pardon me if I decline to enter into a discussion of the relation of the bacillus to phthisis. After somewhat closely following the investigations of recent years, I cannot conclude whether the bacillus is the cause or product of tuberculosis. Certainly no positive therapeutical gain has yet been made, based upon the hypothesis that the microbe is a factor of phthisis *per se*, but rather is our advance

continually upon the old lines of aiding assimilation, diminishing waste and caring for the hygienic surroundings. So far as our present knowledge extends, the bacillus is to phthisis as smoke to fire; it may indicate its existence, but neither incites nor intensifies the combustion. Whatever the development of theory may do for us in the future, let us this evening limit ourselves to deductions made from recorded facts.

The question I would ask you is: Have we reasonable evidence that the products of, or emanations from a phthisical subject, may be carried to, received by, and cause like disease in one previously free from phthisis?

Believing that the weight of testimony is with the affirmative I will offer the results of:

1. Some experiments made as to the transmissibility of phthisis.

2. The practical experience of others, and

3. Personal observations.

1. In experiments made by Tappeiner, in 1883, tuberculous sputa being inhaled by eighteen healthy animals, tubercles in both lungs, and pleura were afterwards found in seventeen. That record of Koch's work, found in the second volume of the Imperial Health Reports, shows that after the inhalation of material from phthisical cavities, the rabbits and guinea-pigs under observation, had within twenty-eight days, tubercles throughout the lungs of all, and in the liver and spleen of some. It is true that many of the masses in Koch's description resemble caseous broncho-pneumonia, but this is also to the point according to the definition of phthisis which we hold.

Warguin, of St. Petersburg, in 1884, showed by experimental research in three series of cases, that the nodules of broncho-pneumonia resulted not only from the inhalation of phthisical sputa, but also from other foreign substances.

The proposition that tuberculous phthisis is an infective malady was endorsed twenty years ago by Villemain and Chauveau, who labored to demonstrate that inoculation of tuberculous matter only, would produce tubercle, while Sanderson, Fox and others, claimed the same results from the introduction of other material.

Martin, of Paris, within the last few years, however, after a number of experiments, which I may not detain you to describe, (*Rev. de Médecine*), seems to have established the following conclusions:

(a) Tubercle inoculated locally, determines, after incubation, and after a variable time, general tuberculosis, and the virus seems to acquire increased activity by inoculation in series of animals of the same or allied species.

(b) But, if we inoculate matter obtained from those tubercles secondary to the injection of non-tubercular foreign bodies, it never gives rise to general tuberculosis; and after two, or at most, three terms of the series, it even loses the power of producing a local inflammation.

Though we were to admit that Warguin, Sanderson, and Fox have found tubercle to result from inoculation with non-tuberculous material, we would still be justified in maintaining that the inhalation and absorption of phthisical matter is a potent cause of phthisis.

The carefully conducted investigations of Cadeac and Mullet recently published, show that while no positive result was obtained from compelling rabbits and guinea-pigs to inspire air exhaled by phthisical patients, yet when air was used collected from near the beds of hospital inmates, the air presumably carrying particles of sputa, two out of twelve guinea-pigs acquired tubercle.

Permit me to refer to an experiment of my own:

Three healthy guinea-pigs were selected. One was inoculated with phthisical sputa, and placed in a small box with one of the others. The third was confined in a box in an adjoining room. They were cared for alike and had similar food. In four weeks the first one died, and the examination showed tubercle in the lungs, and a large cheesy gland near the point of inoculation. Three weeks after the second animal sickened and was killed. I found small granulations scattered through both lungs, at some points aggregated, and in the right lung were two nodules, having a soft cheesy centre. The third guinea-pig, examined three months later, had no evidence of tubercle or other disease.

The only experiment, so far as I know, upon a human subject was made by Drs. Demet, Paraky, and Zallories, of Syra, in Greece, who inoculated, with sputa from a phthisical patient, a man whose history afforded no suspicion of tubercle, and whose lungs were healthy, but who had gangrene due to femoral embolism and who would not permit amputation. In three weeks auscultation revealed evidences of disease at the right apex. Thirty-eight days after the inoculation, the man died from gangrene, when it was found that the upper right lobe had seventeen small tubercles and two granulations in the apex of the left lung.

2. *What has been the practical experience of others?*

One of the most valuable labors of the Collective Investigation Committee in London, is that relating to the transmission of phthisis. While the majority of replies to inquiries were unsupported negatives, 261 answers coming from physicians in family practice affirmed the proposition that phthisis may be communicated from the sick to the well, and evidence was given in proof of the statement. One hundred and ninety-two observers recorded cases where both husband and wife became phthisical, in 130 cases there being no phthisis in the family of the one to whom the disease was thought to have been transmitted.

Some of these cases were very interesting. Dr. Spriggs, of Great Bedford, instanced the case of

Miss R., aged 48, a dressmaker, who, living in rather a lonely cottage at C., Bedfordshire, had three apprentices, young girls from 17 to 19 years of age, not related, from three adjoining villages, who took it in turn to remain in the house and sleep with her, each one week at a time. During their apprenticeship, Miss R. was taken with phthisis, of which she died. In less than two years afterwards, all three apprentices died of phthisis, although in the family history of each, no trace of phthisis existed; and the parents, brothers and sisters of two are alive and well at this time.

Another interesting case is related by Mr. G. F. Blake, of Mosely, Birmingham, in which a perfectly healthy child, with a family history free from all trace of tubercle, is reported as becoming infected by a phthisical nurse, and having died with profuse hæmoptysis, after the disease had run a rapid course.

The following cases were reported to the Clinical Society of London, by Dr. Herman Weber.

A young man who had lost his mother, two brother- and a sister, of phthisis, and who himself had twice had hæmorrhage from the lungs, had quite recovered, and married at 27, being then perfectly well. His first wife was in good health, and came of a healthy family. She died of consumption after her third confinement. The man shortly married again, an "apparently healthy woman," and this second wife, after a year of married life, died of "galloping consumption." He again married a healthy young woman of 25, belonging to an "exceptionally healthy family." During her second pregnancy, she developed symptoms of phthisis, which ran a rapid course, and ended fatally in about eight months. Undaunted, this man married a fourth wife, a perfectly healthy woman of 23, of healthy antecedents. Three months after her first confinement, she began to show symptoms of phthisis, and notwithstanding two sea-voyages, died after nine months, with tubercle in liver, spleen, and intestines, as well as in the lungs. Though the husband of these four wives, who was a sailor, remained in apparently good health, physical examination revealed the existence of morbid changes about the apex of the left lung.

It is possible that the life at sea kept his disease in abeyance; for when he had to lie by on account of a severe fracture, the disease became active, and he died of consumption within two years.

A convincing report of a case in which the portagiousness of phthisis is affirmed, served as an introduction to a valuable paper last year by Dr. F. I. Knight, of Boston, and who has not read the evidence offered upon this subject by Webb.

I need not further collate records, for you gentlemen, being conversant with medical literature, will grant that new and strong proof of the proposition which we have announced is being constantly given.

3. *What have been our own observations?*—In more than three hundred cases of phthisis, I have kept a record of the family history, and find that 51 per cent. of this number were of families in which some other case had occurred. The inquiry extended no farther than to first cousins. Heretofore this would be accepted as evidence in the favor of heredity of phthisis, but I now believe that in many of these cases the disease was acquired by the carrying of the products of disease to a subject whose physical condition favored its reception and development.

I recall the case of Mrs. L., in whose family was no trace of phthisis. Before her marriage, and for several years after, she was the ideal of a healthy woman. Two children were born. Her husband, a well-known city official, had phthisis. Her attendance upon him was constant, and for some months before his death she and the younger child were with him night and day. When called to attend him I found that he had been substituting for the ordinary cuspidore, a newspaper spread upon the floor at his bedside, and this would be loaded with sputa each morning. The case was rapid. The husband died, and within eighteen months Mrs. L. and the younger child also died from phthisis, while the elder daughter, who was comparatively little in the sick room, still lives and is well and strong. I have the notes of other instances almost as instructive, but this will suffice.

From such facts as I have endeavored to give in this paper, I believe it is fair to concede the probability of the portagiousness of phthisis.

3. *How then can the disease be conveyed?*—In two ways mainly: *First*, By air carrying particles of

disease into the respiratory tract. *Second*, By food from infected sources, through the alimentary tract. The first of these propositions is, I think, proven. Not only are the experiments and records here given, powerful affirmations, but there is in the profession a steadily increasing belief in its truth which would require much more negative testimony than has yet been offered.

I would not be misunderstood. I do not think that as yet we can sustain the statement that phthisis is contagious—acquired by mere contact; or infections, if the term be limited to imply a hidden subtle miasm communicating the disease—but I do hold that particles of matter from the site of disease in a phthisical patient may be carried, planted in suitable soil and incite phthisis. I cannot think that all are liable to so acquire the disease.

I would go further, and say that probably only those may so contract phthisis, who by reason of lowered vitality, through previous sickness or long watching in the sick room, or those who have local congestion or inflammation in the respiratory tract. The fixation of a minute particle of dried sputum from a phthisical cavity, upon a point of irritation in the respiratory tract of a non-phthisical patient, may constitute an effective inoculation. This leads me to express my belief in the possibility of auto-inoculation—in so far as the debris from a tuberculous lung coming in contact with the larynx denuded of epithelium may cause laryngeal tuberculosis.

The second proposition that phthisis may be caused by eating the flesh of tuberculous animals, or drinking the milk of tuberculous cows may also be received with the same limitations as the first *i.e.*, that there are conditions which favor the development already existing in the individual; and as Mr. Law, of Cornell University has well said, this embraces such a large class that the interests involved are almost illimitable.

I will not detain you by detailed suggestions as to our duty if the position maintained in this paper be true. There should be frequent change of the atmosphere in the sick room, complete disinfection of all clothing or vessels holding expectorated material, and the close confinement of any relative of, or attendant upon a phthisical patient, should be forbidden.

I also believe the day is at hand when the physician will recognize that it is as much his duty to examine the food that his patient eats, or the milk that is ordered for the sick child, as it is his province to see that the drugs he prescribes are pure and well compounded.

2830 Locust St.

EDUCATION AND REGISTRATION OF PLUMBERS.—

There is a concerted movement on foot in England and Scotland for the better education and the registration of plumbers. In connection with the national movement large meetings have been held in Edinburgh and Dundee, and representative men have been appointed to form local councils. In Edinburgh Sir Douglas Maclogan is identified with the movement.

MONOCULAR DIPLOPIA WITHOUT MANIFEST LESIONS OF THE AFFECTED EYE.

Read before the Chicago Medical Society, February 6, 1888.

BY ROBERT TILLEY, M.D.,

OF CHICAGO, ILL.

In October, 1881, Mr. James E. Adams, of London, England, brought before the Ophthalmological Society of Great Britain and Ireland the subject of unocular diplopia. The question was confined to the existence of the phenomenon in the absence of any abnormal condition of the iris, lens, vitreous, fundus or any marked error of refraction of the affected eye, the question resolving itself into this, is it possible for an eye, not the subject of any manifest deformity to project two images of one object? or are two mental conceptions possible from one impression on the retina?

Mr. Adam's attention was directed to the subject in connection with a suit for damages against a railroad company by a "hysterical woman." This occurred in the spring of the same year, 1881. The symptoms said to have existed in the case were, insensibility, coming on half an hour after an alleged railroad injury, lasting for three or four days, followed by vomiting, then convulsions, then convergent strabismus lasting for some weeks. At the time of the examination by Mr. Adams

both eyes were normal in all respects, the excursions of each separately were perfect and all the associated movements good. She declared that with the right eye she saw two distinct images of a pencil held at twenty inches, separated by an interval of some inches and on the same plane.

He further adds that he has since seen a little boy with a high degree of myopia who claimed to be the subject of the same phenomenon. It is definitely stated, however, that this phenomenon was observed in the right eye only when the left is closed. No statement is made, however, as to whether the closure of the non-affected eye in the woman's case was necessary to develop the phenomenon. The boy is said to have perceived images of double the number of small objects, such as coins that were placed before him, only, however, when the left eye was closed. Mr. Adams, erroneously I think, supposed that with a prism placed base upwards or downwards before the non-affected eye the boy should have, if he were not simulating, seen three objects instead of two. He sums up his remarks by saying that,

Up to the present time (1881) he had never met with a case in which unocular diplopia, in an eye that was physically perfect, was alleged to exist except under circumstances where there was strong ground for doubting the validity of the patient's statements.

It would have been pertinent to have asked if Mr. Adams had ever before seen a case in which unocular diplopia was claimed without lesion of the affected eye. He further states that after the receipt of the claimed damages she speedily recovered, but the statement is too indefinite to be of any scientific value. He does not say that he saw and examined the woman, nor does he refer to any one else who did.

At the same meeting of the Society, Dr. O. M.

Ord narrated in full two cases of unocular diplopia. The one case, a man of 28, may be subject to a certain amount of doubt, and apart from other cases would be of but small value. But in consequence of the agreement of this case in certain particulars with other cases in which there can scarcely exist a justifiable scepticism it is not without value for comparison.

In neither of the cases referred to by Mr. Adams is any mention made of external paralysis, in fact, we are assured in the one case that it did not exist, although according to the woman's claims it had existed and her statements coincide with the observations of others in later cases, and in the other we are justified in assuming that it did not exist at the time of observation.

In the first case mentioned by Dr. Ord we have the existence of paralysis or paresis of the external recti distinctly stated. There is in this case no mention made of the condition of the iris, although in all probability the pupil was dilated. We are led to infer, although it is not stated in so many words, that when both eyes were used he was the subject of ordinary diplopia arising from the feeble or paralyzed condition of the external recti, but no direct statement is made that he saw quadruple images. This is an important peculiarity. You will remember that the closure of the non-affected eye in the case of the boy referred to by Mr. Adams was necessary to the development of the phenomenon.

The second case reported by Dr. Ord was a school boy admitted to St. Thomas' Hospital September 3, 1879, 13 years of age. And strange to say, the preliminary symptoms are in some respects very similar to the first case referred to by Mr. Adams. The boy it is true had an epileptic fit. He was quite unconscious. No general paralysis followed, but he remained drowsy, and for four days had constant vomiting, and both external recti acted imperfectly. There is no note made that the boy ever saw four images when both eyes were open, and there is no statement that he did not. The movements of the eyes caused pain and the pupils were widely dilated. Mr. Nettleship, of St. Thomas' Hospital, also examined this boy and says:

I began by simply disbelieving the boy's statement, but repeated and varied trials by others as well as myself, left little doubts that at any rate the boy was sincere in his statements.

It will thus be recognized that the phenomenon, if it exists, is an unusually rare one and that it devolves upon any one who presents a case to detail the most minute particulars.

This boy was again, later, admitted to the hospital, and was under Mr. MacCormac's care for an abscess on the back of the neck. Nothing was then known of his previous history. He died quite suddenly Nov. 20, 1880. The post-mortem examination revealed in the right cerebral hemisphere, in the normal position of the right lateral ventricle, an old blood-clot, having a slight attachment at its lower surface. It was egg-shaped, about $2\frac{1}{2}$ inches long and 1 inch thick. A small aneurism the size of a pea was found $\frac{1}{4}$ of an inch below the blood-clot. The blood-vessel connected with the blood-clot, but the lumen was

closed with a continuation of the blood-clot. This blood-clot was practically a tumor, was distinct and separate from the right lateral ventricle, but it had displaced the ventricle considerably to the left; there was a half inch of tissue separating the space of the blood-clot from the ventricle.

At the same meeting Dr. John Abercrombie reported a case that was under treatment at the Hospital for Sick Children, Great Ormond Street, in the month of July, 1881. The previous history of two months gives a record of headache, vomiting, peculiarity of speech, loss of power on the right side for two months, squint for three months, had chorea, no rheumatism, no convulsions. Mother died of cancer, father said to have fits. One more child of the family "healthy."

The interesting feature for the present study is the existence when admitted to the hospital of paralysis of the right external rectus, slight internal strabismus of the right eye, no ptosis.

Sees double with both eyes and also when right eye alone is used. The false image is always above and to the left of the true one.

No mention made of the condition of the pupils. Optic discs obscure, right paler than left, veins in both eyes turgid and tortuous. Dr. Abercrombie says:

During the next few days she was repeatedly examined with regard to diplopia, but the result was always the same, viz.: when the left eye was closed her sight was normal.

July 28, unconsciousness developed, slight convulsions, pulse very frequent, breathing irregular, eyes fixed, staring pupils, moderately dilated—death.

The autopsy is so significant and the publication in which it appears so little circulated that I give it verbatim.

Autopsy 16½ hours after death. Body weighed 44½ pounds. Rigor mortis marked. Calvaria and dura mater natural. Convulsions flattened, especially in the right posterior region. Surface of brain dry and sticky; the two hemispheres adhere to each other; corpus callosum arched. Pia-mater at base rendered opaque by recent exudation of greenish lymph, a thin layer of which envelops pons Varolii, and causes gluing together of medulla oblongata and cerebellum. The exudation of lymph extends into each Sylvian fissure.

On cutting into the right hemisphere the white matter in the region of the temporo-sphenoidal and occipital lobes is found to be broken down and a large abscess cavity takes its place containing some ounces of laudable pus; the descending cornu of the lateral ventricle is filled with pus and leads directly into this abscess cavity; the lateral ventricles otherwise are dilated and filled with a thin slightly turbid fluid.

Left hemisphere, cerebellum, pons Varolii and medulla oblongata, natural; left optic disc swollen, margins ill-defined. Both lungs show slight hypostatic congestion. A little thickening of mitral valve. Alimentary canal, liver, spleen and kidneys normal. Some of the mesenteric glands a little enlarged and caseous.

Dr. Abercrombie adds that there is not the least reason to suspect this child of malingering. She was examined on different occasions without anything occurring to lead us to doubt her veracity. I think, therefore, we may accept it as a fact that she had double vision with the right eye.

In May, 1884, Mr. Marcus Gunn and Dr. J. Anderson again brought the subject before the Ophthalmological Society of Great Britain, with the presentation of another case, and on the same occasion Dr.

Brailley and Messrs. Juler and Nettleship referred in brief to the cases under their care.

The case reported by Mr. Marcus Gunn and Dr. Anderson was a painter, æt. 34 years. There was paresis of the left external rectus, there was the usual homonymous diplopia of abducens paralysis, but also double images with the left eye when the right eye was shut. Tension in both eyes normal, pupils unequal, left larger, both acted to light and accommodation. On looking upward the right globe made a slight excursion inward on its way, and when he looked to the left his right eye was directed very slightly upward as well as to the left. In other respects the movements of the eye were normal. There was no nystagmus. In other respects the left eye was normal—nothing visibly wrong in the cornea, aqueous, iris, lens, vitreous, or fundus. Examination revealed the diplopia to exist over the left half of the field of vision and also over the upper part of the right half; the images got farther apart as the object neared the periphery. It was not possible to obtain the perception of three images by the aid of prisms. This patient was also examined by Dr. Nettleship. There was no reason to suspect the patient of simulation.

A detailed history of this case is given in the report. It involves so many nervous lesions that, although syphilis was denied on the part of the patient, and no demonstration of lesion could be made, he was subjected to anti-syphilitic treatment, and so far improved that the diplopia and the paralysis of the external rectus disappeared. He was still occasionally subject to attacks of unconsciousness, which were called "fits."

The cases of Mr. Nettleship, Mr. Juler and Dr. Brailley were all associated with paresis of the external rectus and dilatation of the pupil.

I will now give the details of a case at present under my observation which gave rise to my presentation of the subject.

Mary R., 9 years, orphan, no family history obtainable. When she was brought to me her face presented an appearance of great distress, a suppliant expression; her step was cautious, as though afraid of jarring her head. The left eye was kept partially closed, not from ptosis, but from the action of the orbicularis muscle. She complained of severe pain in the infra-orbital region, greatly aggravated on pressure over the infra-orbital foramen. There was increased pain on even medium movements of the eye, so much so that she would move the head rather than the eye. The pain, apart from the infra-orbital region, was located rather in the region of the external rectus, and the position of the pulley of the superior oblique. There was no paralysis of any of the muscles demonstrable, and even paresis was very questionable. When the eyes were directed upward the left eye turned inward and the effort was associated with great distress. The difficulty of the movement was rather indicative of a pain in the muscles, developed by an effort at contraction. There was a headache which she said came on every other day. There had been and there was no other evidence of any malarial affection.

There was a very slight amount of conjunctivitis of the left eye only, no blepharitis, no other external lesion; cornea, aqueous, iris, lens, and capsule, vitreous and fundus were all normal, and there was no detachment of the retina. There had been no complaint made about the right eye, nor did it present any lesion.

V. with both eyes together and each eye separately, $\frac{6}{10}$; N. V. S. o.6. Pupils normal in every respect; contracts quickly under the influence of light, and normally on accommodation.

She persistently claims double vision with the left eye. On examining her the first time, suspecting some difficulty in the form of paresis of the muscles of the left eye, I asked her if she ever saw two objects instead of one. "With this eye I do," she said, pointing to the left. Quite skeptical, I proceeded to examine her statements.

When a probe was held vertically before her at a distance of 50 cm. she said she saw two, the extra image being projected toward the median line, and a little less clear. She pointed to its location definitely. When, however, the probe is held in a horizontal position, she located the extra image as above the object. The double images do not change their relative distances when moved toward the nasal or temporal sides, nor when the object is moved up or down, only the observation is less satisfactory on account of the discomfort associated with the efforts at movement.

However the experiment was varied, she invariably gave evidence of double vision with one eye. When one, two, or three coins were placed before her, she saw two, four, or six.

It occurred to me to measure the relative distance of the extra image when looking at a near object and one that was more remote. Of course such a calculation would be a good check on the accuracy of her answer. The principle involved being the distance of the extra image from the object at one metre should vary directly as the distance of the extra image at six metres. One measurement which I made before using atropine gave me a displacement of the extra image to the nasal half of visual field of 0.75 millimetres at a distance of one metre; and at six metres the displacement, according to her location, 400 millimetres. The theoretical distance on calculation would give 450. This I considered a corroboration of the girl's veracity, as the discrepancy could well be referred to inaccuracy of my crude measurements. It would have been impossible for a child of 9 years to have calculated so near in the absence of some actual sensation similar to what she claimed.

Atropine was applied to the eye, and observations were made two days later when the eye was fully atrophied, the pupils dilated *ad maximum*, and the accommodation completely inactive. The same answers were given to the same questions, only now she located the extra image not only in the nasal and upper half of the field of vision, but as quite a good deal nearer to her than the object. This phenomenon was not noted before the influence of the atropia. It was not definitely noted that it did not exist, but I think I should have noted the fact when measuring the distances of the extra images from the object, if she had thus seen it.

The vision of the left eye, under the influence of atropia, required a lens $S+1$ D to restore the visual acuity that she had before, showing a slight amount of latent hypermetropia. With the $S+1.00$ D, however, vision was ρ as before. No satisfactory explanation was obtained relative to the deficiency of visual acuity, whether it might be referred to retinal asthenopia or cortical asthenia.

The exact displacement of the extra image at one metre during the influence of the atropia was difficult because of the above-mentioned fact that the extra image was nearer to the eye than the object, but approximate measurements gave the distance at one metre to be .65 millimetres and at six metres the distance of the extra image was claimed to be 330 millimetres. Theoretical calculation would have given 390 mm. It will be remembered that under atropia the extra image seemed less distant than the actual object when near objects were under observation, but the phenomenon did not exist when looking at an object at a distance of six metres. It did not occur to me to inquire at what distance this phenomenon ceased to be observable.

Pursuing investigations further I found the girl to be completely red blind. She had no conception of any difference between greens and greys; purple, blue and violet she put together as similar colors.

The observations were made at intervals between November 12, 1887, and December 4, 1887. On December 4, when in church, she felt that she could neither speak nor breathe, and then she was unconscious. Convulsions followed which were said by the Sisters to have lasted four hours. After a period of consciousness the convulsions were renewed the same night and said to have continued for a similar period. After this she felt pain all over the body. Confined to the bed. December 8, at a consultation with Dr. D. W. Brower, Professor of Nervous and Mental Diseases, at the Woman's College, the double vision with one eye was demonstrated. December 13, has been frequently delirious since last record; cannot keep anything on the stomach. When delirious complains of pain on the top of the head. Buries her head as much as possible in the pillows. Pulse has varied from 60 to 75 and the temperature has scarcely varied from the normal. December 15, has been very restless—slapped and tore the hair of her little attendant. All at once she became better. She slept well, complained of no pain, and ate her food, and the vomiting ceased. For the first time since she has been under my observation she can now look up without experiencing pain. There is no mydriasis, no lack of accommodation, and no paralysis or paresis of the external ocular muscles.

She still sees double with the two eyes open and with the left eye alone, the false image referred to the same position whether the right eye is open or closed. It is always in the nasal and upper half of the visual field. I could not get her to acknowledge any inclination of the images.

December 23, she left the institution in charge of the Sisters, and the Sister in charge reported she seemed well as ever but less active and less capable mentally.

January 19, 1888. As she did not return to school, I visited her at home. I found her afflicted with abscesses all over her body, some under the arms and on the forearm. The left eye was giving her no pain, but the double images were present, and a pain which she said was similar to the pain which she experienced in the left was appearing in the right eye.

I do not expect to see her again. I close the report here. The etiology, pathology and location of the cerebral lesion are all involved in so much obscurity that I shall add only a few words.

The similarity of the main features of the case to the two cases above referred to made me suspect from the first time I saw the child the existence of either brain tumor, or abscess. The location of the tumor or abscess, simply from the two autopsies referred to above, I referred to the right cerebral hemisphere, in such a position as to encroach on the lateral ventricle. I have no theory whatever to present relative to the possibility of double images under the circumstances. The development of convulsions and their persistence at intervals with the associated vomiting strengthened that opinion. The increased severity of the symptoms on the 14th, and the sudden improvement, made me suspect an abscess and its rupture into the third ventricle. The development of abscesses over the body in about two weeks after the sudden improvement, made me suspect that these abscesses were of a metastatic character. As to the character of the primary abscess, I have not sufficient data to justify any conclusion, and the want of education on the part of the person in charge of her precludes investigation.

APEX EXPANSION VERSUS PURE AIR IN PULMONARY CONSUMPTION.

Read before the Philadelphia County Medical Society, February 22, 1888.

BY THOMAS J. MAYS, M.D.,
OF PHILADELPHIA.

Next to the tubercle bacillus, impure air stands most prominent among the many agencies which have been assigned as the causes of pulmonary consumption. Innumerable plans and methods have been devised and proposed for improving the ventilation of our dwellings, hospitals and workshops; volumes upon volumes have been written on the ill effects of breathing vitiated air; and the immaculate freshness of the country and mountain air has come to be universally regarded as a certain guarantee against pulmonary consumption. These, like many other popular notions, contain a germ of truth, but actually are delusive, inasmuch as they exaggerate the effects of a small evil, and afford a false sense of security against the real source of danger in the production of this disease. This we shall endeavor to show in the following pages.

At the very outset we desire it to be well understood that we do not in the least underrate the value of fresh, wholesome air in the prevention and treatment of pulmonary consumption, and while it is

probably true that on the whole country people enjoy greater immunity from this disease than city people—though this is not proven, on account of a lack of adequate statistics—yet we are convinced that the purity of the atmosphere plays a very small part in bringing about this probable result. If we are permitted to make a homely, hypothetical proposition, we will state that if two individuals who respire the same quantity of air, and who are equally well off so far as heredity, food, clothing, warmth, comfort, etc., are concerned, were both enjoined to maintain a sedentary and a stooped position of their bodies for an unlimited period, one inside of a house and the other outside in the open air, we have no reason for believing that the one inside will fall a victim to this disease sooner than the one on the outside.

If it were true that this disease is the result of breathing a vitiated and impure atmosphere, how can we account for the fact that the inhabitants of Iceland, Greenland, Lapland, and of other cold countries of the north, who live in dwellings which are notoriously wanting in ventilation, are practically exempt from this disease? Of the Icelanders, Mr. Warnford Lock,¹ who is very familiar with these people, says that their life is

"one long exposure to the elements, and during the night they live in dwellings devoid of ventilation, and which, if not buried beneath the earth, are built of turf and often become grass-grown. A very bad feature being the excessive stuffiness of the common living and sleeping room, when, owing to the absence of fires, the greatest possible crowding and plugging are necessary in order to maintain a tolerable degree of warmth."

And yet Dr. Cullimore,² from whose work the above quotation is taken, says (p. 73)

"that consumption in Iceland is never indigenous, but is always, when it does occur, imported from abroad and but seldom extends to the second native generation."

On the other hand, it may be stated that the people of the tropical regions of the globe who enjoy an uninterrupted reveling in pure, fresh air, both day and night, winter and summer, are by no means free from pulmonary consumption. The only difference, so far as the physical life of these two classes of people is concerned, is that the warm climate, which produces such a luxuriant atmosphere, also creates a tendency to physiological sluggishness and an indisposition toward physical exertion among its inhabitants; while the people of the cold and rigorous north are compelled to maintain the warmth and vitality of their bodies in great part, by day, through physical exercise, of which their occupations of hunting, fishing, herding, etc., give them a full share. It is also well known that miners and laborers employed in coal mines, who continually respire an atmosphere loaded with impurities, and damp and musty, suffer but very little from this disease.

One fact which lends color to the belief that pure air is such an essential element in limiting the ravages of consumption, is that those who occupy elevated or mountainous regions are less liable to this disease than those who live near the sea level. Thus Fuchs shows from extensive data that

"at Marseilles, on the seaboard, the mortality from this disease is 25 per cent.; at Oldenburg, eighty feet above the level of the sea, it is 30 per cent.; at Hamburg, forty-eight feet above the sea, it is 23 per cent.; while at Eschevege, four hundred and ninety-six feet above the sea level, it is only 12 per cent.; and at Brotterode, eighteen hundred feet above the sea, it is but 0.9 per cent."

Carrying this line of observation further, it appears very probable that consumption is almost unknown among any native people who live more than 6000 feet above the level of the sea.

Now that which concerns us here chiefly is the reason why mountain climates are, as a rule, so free from pulmonary consumption. Is it because the atmosphere is pure and free from septic germs? This is hardly possible, for if it were true that the aseptic condition of the air played any very prominent part, why should the Icelanders, who nightly reek in a most filthy atmosphere; or the dwellers along the Nile, who, according to Mr. B. Phillips, live "in huts where the pure air has neither ingress nor egress, except through a small hole near the ground;" or the coal miners, who continually respire a foul and poisonous atmosphere, all be comparatively free from this disease? Is it due to the general absence of humidity? We think not; for Bogota, the capital of the United States of Colombia, located on the Andes, near the equator, and at an elevation of over 9000 feet, is said to be entirely exempt from this disease, although dampness prevails to quite a large extent. We think there is much reason for believing that it is principally, if not entirely, on account of the attenuated condition of the atmosphere, and shall, therefore, at once proceed to consider the physiological influence of high altitudes on the human body.

It is estimated by Dr. Denison that at an elevation of 6000 feet the surface of the body is relieved of nearly 7000 pounds pressure. When such an enormous weight is lifted from the body it is quite evident that its interior must also be markedly affected—the pulse is accelerated from fifteen to twenty beats per minute; the respiration is quickened from ten to fifteen breaths per minute; evaporation from the skin and lungs is increased, and the amount of urine is diminished. These are some of the immediate effects. Protracted residence in such a high region enlarges the chest capacity. The Quichua Indians, who dwell on the elevated table lands of Peru, have enormous-sized chests, containing capacious lungs with large air cells. The Mexican Indians possess chests which are out of proportion to the sizes of the individuals. Dr. Denison says that children born in the Rocky Mountains have chests of unusually large capacity, and M. Jaccoud states that at St. Moritz the respirations are not only more frequent, but fuller.

The reason why the number of respirations increase while ascending a high elevation becomes clear when we take into consideration the fact that at the sea level a cubic foot of dry air contains about 130 grains of oxygen, while at an elevation of 6000 feet it contains only about 106 grains—nearly 25 per cent. less than the body is accustomed to breathe at or near the seaboard—therefore, in order to supply the wanted amount of oxygen to the body, the

¹ The Home of the Eddas. S. Low, 1879.

² Consumption as a Contagious Disease. Ballière, Tindal & Cox, 1880.

respirations must either increase in number or in extent. From all accounts it is very probable that respiration becomes accelerated only during the early period of exposure to such an attenuated atmosphere, and that subsequently this function becomes slow again because the air penetrates more deeply and completely into lung tissue but little utilized before.

That man does not suffer under such a deprivation of oxygen is evident from what we know to be true of his lung capacity under ordinary conditions of life. Prof. Mosso has recently proven experimentally that man possesses a lung capacity which is nearly one-fourth larger than the actual necessities of life at the sea level demand; hence by employing his whole lung capacity he can extract a sufficient amount of oxygen from this attenuated atmosphere without difficulty. And herein lies the secret why so many consumptives and others with weak lungs, derive such a great benefit when they resort to a mountain climate. It may be trite, but it is nevertheless true, that all consumption practically begins at the lung apices, because these parts are habitually inactive. They are inactive because, in the first place, the bronchial tubes are so arranged that they conduct the air with greater facility to the base than to the apex of a lung, and, in the second place, because the lung is larger than necessary; hence the base, which is filled most readily, is filled first, and the apex, if at all, toward the end of inspiration. The apices, therefore, become the superfluous parts of the respiratory organs. It is quite different, however, when the body is immersed in a highly attenuated atmosphere. Every available space in the chest is now brought into requisition to furnish the needed amount of oxygen, the apices are called out of their lethargic state, and the alveoli are inflated, and if the infiltrated areas are not dispersed the surrounding alveoli are kept permeable, and so the disease is, at least, limited and called into abeyance.

This statement is corroborated by those who have had large experience in the climatic treatment of pulmonary consumption. Thus Ruedi² reports "that of 600 consumptives under his care at Davos, expansion of the thorax took place in no less than 584." Dr. Denison³ says "the increased circumference of the chests of consumptives after undergoing the high-altitude treatment is shown in many of Prof. Weber's, as well as in my own, cases." Dr. Lindsay, in the work already quoted, states (p. 32) that

"Davos does not cure consumption by its sunshine, or the purity and dryness of its air (although these conditions undoubtedly cooperate in the beneficial effect), but mainly by the rarefaction of its air, which stimulates respiratory activity, promotes healthy expansion and soundness of tissue in the lungs, and hence aids them to resist the spread of morbid deposits."

So much, then, for the immunity which is afforded by mountain climates; but that which is of still greater interest to us is the fact that those who follow active employment are less liable to this disease than those who pursue sedentary and quiet occupations. Thus, M. Lombard found

"in Paris, Geneva, Vienna and Hamburg, that there are a

greater number of persons leading a sedentary life afflicted with phthisis than of those leading an active life, in the proportion of 141 to 89. In the Brompton Hospital the relative liability was found to be 63 per cent. of indoor males to 30 per cent. of outdoor, and all the consumptive females followed indoor occupations. Dr. Guy found, in the close workshops of a printing establishment, the compositors, whose employment is sedentary, fell victims to phthisis in the proportion of 44 per cent. to 31½ per cent. of the pressmen, who, although breathing the same air and in every other respect subject to the same habits of life, differ only in the active bodily exercise which the press imposes on them; and among the same class of operatives the deaths from the same cause did not exceed 25 per cent. in those who use exercise in the open air." (Ansell.)

There can be no doubt, too, that those of our Indians who are still allowed to obey their roaming instincts of hunting and of fishing, or to follow their vocation of farming, which a number have, owe their immunity from this disease, which we know they possess, in great part if not entirely to the physical exercise which they obtain in this manner; while those who are subjected to the idle and improvident reservation life die rapidly from it, principally because they are deprived of their wonted exercise. This is of special interest to us here, because it has such a direct bearing on the main point at issue. Some of the former class of Indians, like the Pimas, for example, who may be called wild, although they are agricultural in their habits, are living in half underground huts with very little or no ventilation; yet, from all accounts, consumption is an exceedingly rare disease among them.

Thus far we have seen that, on the whole, those who occupy elevated habitations, as well as those who follow active exercise, are more exempt from the disease under consideration than those who live near the sea level or those who live a life of quietude. In connection with this we will consider the influence of physical exercise on the lungs, and endeavor to ascertain how it affords protection against consumption. During physical exercise more oxygen is consumed by the muscles, and more blood and air circulate through the lungs than during rest. Just how much more air enters the lungs during activity than during rest can easily be estimated when it is known that during inactivity a man breathes 480 cubic inches of air per minute, and while walking at the rate of four miles per hour, or while tramping a treadmill, he breathes 2,400 cubic inches, and if he walks at the rate of six miles an hour he takes in 3,260 cubic inches of air per minute. The difference between 480 and 2,400 cubic inches of air-capacity shows that during the exercise of walking even at the rate of four miles per hour, five times more lung surface is thrown into action than during rest; which proves very conclusively that bodily activity possesses a marked influence in determining the degree of lung expansion, and that under such conditions regions of lung will be called into service which are never fully reached by air during bodily rest.

This is in entire accord with what practically exists. Thus Darwin⁴ says that the lungs in improved breeds of cattle, which naturally take little exercise and are domiciled much of the time, "are found to be considerably reduced in size when compared with those possessed by animals having perfect liberty," and

² Climatic Treatment of Consumption. By Dr. J. A. Lindsay, p. 62.

³ Rocky Mountain Health Resorts, p. 85.

Waldenburg states that the vital lung capacity is smallest in persons whose sedentary lives, such as professional men, students, clerks, etc., and is greatest in those who follow active outdoor occupations, such as sailors, recruits, etc. Chassagne and Dally, in their joint work on the "Influence of Gymnastics on the Development of Man," report that at the Military School of Gymnastics of Joinville-le-Pont, out of 401 individuals subjected to gymnastic exercises for five months, 307, or 76 per cent., showed an increase of an average of 2.5 centimetres in the mammary circumference of the thorax. According to Dr. Abel, 75 per cent. of those who practice gymnastics in Germany experience an increase in the measurements of the chest. There can be no doubt that the principal reason why consumption increases with the advent of civilization is that everything in civilized life tends to produce physical inertia in our bodies. Walking is substituted by riding in carriages and in cars; manual labor is in great part replaced by machinery; active outdoor labor is supplemented by quiet indoor occupations—in fact, everything which tends to produce physical activity is exchanged for a life of ease and indolence. The American Indian, as has already been stated, is known to be comparatively free from the disease in his wild state, but as soon as he acquires the habits and customs of civilized life he becomes its victim.

In converging the two lines of reasoning which have been thus far developed in this paper, it appears that the immunity from consumption which is established by residing in a mountain climate, and by practicing physical exercise, is chiefly brought about in the same manner, viz.: by increasing the capacity of the chest. And from a practical point of view it is of some moment to know whether the former has more weight in bringing about such restoration than the latter—or, in other words, whether those who live in high altitudes continue to enjoy this exemption if they refrain from active physical exercise and take up a sedentary occupation in such regions. From recent inquiry into this subject we are inclined to believe, at least so far as the Rocky Mountain climate is concerned, that as soon as outdoor pursuits are exchanged for sedentary indoor occupations, consumption increases in frequency. It is, therefore, quite certain that physiological exercise plays a more important part in the problem of prevention and cure of consumption than a residence in an elevated or mountain climate, however valuable the latter may be. We have, moreover, good reason for believing that the immunity which is established through physical exercise is more permanent in character than that which is secured through residing in a mountain climate, for it is a common observation that consumptives flourish only in high altitudes so long as they remain; a protracted stay at the sea level is always regarded as perilous. Such consequences are in perfect harmony with what one would be led to apprehend from a knowledge of the physiological factors involved in the restoration of the patient. These factors are entirely local, and

their influence does not extend very far beyond their immediate dominion. This objection does not hold good in regard to physical exercise. One thing may be said, however, in favor of mountain climates which is not true of physical exercise, viz.: it produces its beneficial results without conscious effort on the part of the individual; therefore, when the remedy is viewed from a standpoint of ease and comfort, and not from one of permanence, the mountain climate is to be preferred.

In discussing the influence of mountain climate it must not be overlooked that, on account of its rarefaction, it increases the circulatory and cellular activity of the body, and in this way undoubtedly aids the process of nutrition; yet even this influence cannot be denied to physical exercise, although it is brought about in a more direct and positive manner.

While increased chest capacity is, therefore, the great desideratum in preventing and treating consumption, we have the strongest evidence for believing that it is not so much a question of developing the base of the lungs as it is one of expanding the apices. This is well shown by the fact that the civilized female, although she has on the whole much less chest capacity than the male, yet, owing to her increased costal expansion, which has been cultivated through the protracted influence of tight lacing, she is less liable to pulmonary consumption than the male.⁷

Pulmonary Gymnastics.—Such, then, are the comparative effects of mountain climate and of physical exercise in the treatment of pulmonary consumption, and it now remains to be shown how the effects of the latter can be obtained without resorting to those of the former. Reference has already been made to the fact that muscular effort increases respiratory motion, and in taking up the question of pulmonary gymnastics, it is not our purpose to discuss those exercises only which have a direct influence on the chest capacity, but also those which, through the body, have an indirect influence on the pulmonary organs. In all exercises it is very important that none should be carried to the extent of decided fatigue; and that, whenever possible, the body and head should be kept erect, the shoulders thrown back and the lungs thoroughly filled with each breath; that breathing should only take place through the nose; and that sufficient food is taken during the intervals.

Bodily Exercise.—The power of walking is common to most people, and its influence on the lungs, as we have seen, is very marked. It is regarded of great service even by those who exclusively advocate the utility of high altitude treatment. Dr. Brehmer, of Görbersdorf, according to Schreiber, was the first to prescribe, for consumptives, walking up a gradual ascent. A semi-daily walk of half an hour or an hour, either on the level or on a slight upward grade, is of immense advantage to the invalid. Running, dancing, skipping rope, (especially when the rope is swung backward), bowling, etc., are to be highly recommended. Whatever the mode of exercise may

⁷ Animals and Plants, vol. ii, p. 361.

⁸ Pneumatische Behandlung Respir. u. Circul. Krankheiten, p. 179.

⁷ Female Dress as a Determining Factor in Pulmonary Consumption. Thomas J. Mays, Med. News, January 7, 1883.

be, it must be performed under as little compulsion as possible. One reason why the above named exercises are so conducive to health consists in the fact that the excitement which they induce is so attractive that the consciousness of muscular effort is lost.

Among the many indoor exercises the following movements are very valuable. The arms, being used as levers, are swung backward as far as possible on a level with the shoulders during each inspiration, and brought together in front on the same level during each expiration, or the hands are brought together above the head while inspiring, and gradually brought down alongside the body while expiring. When a deep inspiration is taken in accordance with either plan and held until the arms are gradually moved forward or downward, or even longer, the process of chest expansion is materially enhanced.

Another very effective exercise is to take a deep inspiration, and during expiration only the patient, in a loud voice, will count as long as possible. A male person with a good chest capacity can count up to sixty or seventy, while in a female with ordinary lungs this power is somewhat reduced. Practice of this sort will gradually develop the chest, and the increased ability to count is a measure of the improvement going on within the thorax.

Many of these movements may have their effects greatly enhanced by the use of dumb bells, chest weights, etc., which are made especially for the purpose.

Compressed and Rarefied Air.—The breathing of compressed and rarefied air is attracting wide attention at the present time in connection with pulmonary consumption, and is another most useful method whereby the chest capacity can be markedly improved. Nearly four years ago Dr. Cohen, the honored President of our Society, advocated the substitution of compressed and rarefied air for a change of climate, in a paper which he read before the American Climatological Association. Here he says:

"In many cases fully as much good can be secured by this treatment as by change of climate, and in a few much more; though, in the vast majority of cases in which change of climate is advisable, it is but a poor substitute."

There can be no doubt that compressed and rarefied air is inadequate when used alone in many cases, but when combined with pulmonary gymnastics and other judicious treatment, we are not sure that the results obtained are inferior to those which are derived from climatic treatment. Recent experience has shown us that when consumptives, who had spent one or two winters on the Rocky Mountains, or on the Pacific Slope, without benefit, were subjected to the use of compressed and rarefied air in association with other pulmonary exercises, such as are above described, their improvement became marked and decided. On the whole, our experience with the air treatment, combined with pulmonary gymnastics, has been very favorable, and we think that this is in consonance with the observations of others. Thus the late Professor Flint, in his work on *Phthisis*, says (p. 406):

"It does not appear, from the analysis of my cases, that

changes of climate have in a marked degree a beneficial influence, as compared with the hygienic measures available at home."

We believe, however, that, as a rule, these measures are applied too infrequently to be of the greatest service; and, therefore, insist that the pulmonary gymnastics be repeated every hour and a half during the day—the first thing in the morning and the last thing at night—and for from fifteen to twenty minutes at each time; and that the air inhalations be given at first twice, and in the course of two or three weeks gradually increased to four or five times a day, and even oftener. It is very true that this method of treatment involves more labor and perseverance on the part of the patient than is required in a high mountain climate; but then it is a question whether the patient is not more than compensated by the consciousness that a separation from friends is unnecessary, that the heavy expense, the dangers and discomforts incidental to travel are avoided, and, above all, that the improvement which may take place will be persistent and be practically unaffected by a change of residence.

Now, after reviewing the whole subject, we are driven to the conclusion that the line of immunity from consumption, which, in the early history of our country, was located at the Atlantic seaboard, and which has gradually receded westward with the tide of civilization, until at present it has reached the latitude of Colorado, will not stop in its course until it touches the shores of the Pacific; that the question of curing the disease does not depend on the purity or freshness of the air, or upon the number of bacilli which the atmosphere may contain, or upon the amount of oxygen which may be introduced into the body—for these are all secondary considerations; but it is simply a mechanical question—a question as to the best mode of expanding the lungs, and especially the apices of our round-shouldered and flat-chested patients, of removing the infiltrated products already existing, and of enhancing the constitutional resistance.

MEDICAL PROGRESS.

ANATOMY AND PHYSIOLOGY OF THE PHRENIC NERVE.—MR. W. W. WAGSTAFFE has the following note in *St. Thomas's Hosp. Reports*, vol. xvi., 1886:

During the course of teaching and examining I have been struck with the absence from most, if not all, of our text-books, of any notice or explanation of an important fact which appears obvious anatomically—the peculiar relation of the phrenic nerve to the anterior scalenus muscle. Our most generally used anatomical works ignore the fact that in passing over this muscle the phrenic nerve sometimes gives branches to it. This I have traced in several cases, but it is no doubt more usual for the branch of supply to the muscle to come from the fourth cervical nerve close to the origin of the main root of the phrenic. But whichever arrangement exists, the association of either the trunk or the root of the phrenic

ic with the nerve-supply to the anterior scalenus is the fact I wish to emphasize, and the course of the nerve over the muscle must also in itself be looked upon as a matter of interest and importance. Those few anatomical authorities who mention the fact of branches to the anterior scalenus sometimes coming from the phrenic, either entirely omit a reference to its obvious physiological use as a motor nerve to this muscle, or lose sight of what appears an important physiological connection between the diaphragm and the anterior scalenus in respiration.

Even in standard physiological works I do not find a satisfactory reference to this fact. Professor Michael Foster alone among English authorities gives any prominence to the special value of the scaleni in the mechanism of respiration, but even in his admirable work the meaning of the relation of the phrenic to the two extremities of the thorax is not satisfactorily enunciated. And in speaking of the effects of the division of the phrenic (in the rabbit) reference is only made to its influence on the diaphragm. I have not the means by me of determining a point which would be interesting to notice, and this is how far the relationship of the phrenic to the anterior scalenus is common to animals having thoracic respiration.

Noting, then, that the phrenic in passing over the anterior scalenus may supply it with branches, and that its final distribution is to the diaphragm, we have, it seems to me, an important anatomical fact indicating the simultaneous action of the upper and lower ends of the respiratory apparatus—a mechanism which the ordinary bellows or concertina may roughly exemplify. The scalenus would fix and raise the first rib, from which the intercostals would work, probably external and internal, thus acting as elevators of the ribs and increasing the lateral capacity of the chest, while the diaphragm of course increases the longitudinal capacity.¹

The course taken by the phrenic is suggestive of its physiological function on the muscles above indicated, and it would be of interest and value to notice the effect of injury or disease upon the phrenic between these two endings; such cases, however, are not easy to find. Some interesting cases are to be found in Le Gros Clark's paper just referred to, but in these the whole of the phrenic has been paralyzed from injury to the cord, and we cannot distinguish the function of the phrenic as to its double supply.

Henle notices one case, but one only, of branches coming from the phrenic to the anterior scalenus, and this case is given on the authority of Luschka. I shall be satisfied if this note calls attention to the fact, and suggests a satisfactory physiological explanation.

LAPAROTOMY FOR ACUTE INTESTINAL OBSTRUCTION.—In the *Medical Record*, of February 25, 1888, Dr. W. T. BULL records five cases of intestinal obstruction operated on, with two deaths. The histories show that the operations were done as early as consent could be obtained, and with a fair meas-

ure of success, but in all of them still earlier interference would have been better surgery and more advantageous to the patient. It is difficult to adhere to a rule that an operation should be done at a given time from the onset of an attack. Either the danger is not appreciated by the physician in attendance, or the friends object, or some variation in the symptoms leads to the hope that medical measures may suffice. Much valuable time is lost in efforts at refinement in diagnosis, such as the location of the seat of obstruction and the determination of its nature. I do not mean to speak lightly of the information we possess, which will sometimes enable us to arrive at valuable conclusions in these respects, but I think the deciding of the main question, Does intestinal obstruction exist? is more important. This conclusion once reached, medical measures may be resorted to. If they fail to relieve at the end of from twenty-four to forty-eight hours, the operation should be performed. In this I refer, as a matter of course, to acute obstructions. In chronic cases, like the last two narrated, it is proper to delay longer. The persistence of pain which requires morphine for its relief, the continuance of vomiting, the failure to provoke a movement by several rectal enemata, aided by mild aperients, these symptoms, with or without commencing tympanites and without fever, should invite the attention of the surgeon, and demand operative interference unless promptly relieved. The operation decided upon, an incision large enough to admit the hand should be made, and the presenting intestine pushed away to permit inspection of the rectum, cæcum, and sigmoid flexure. Then bands may be felt for, or empty loops of intestine, and this failing to discover the lesion, the gut may be searched, while still inside the belly, for congested or distended portions. This can be done rapidly, if the edges of the abdominal wound be strongly retracted. Removal of the small intestine from the cavity, or "eventration," which has been advocated by Kümmell, seems to me a very serious step. It has, in the instances where I have done it for gunshot wound, invariably produced great shock. It might seem proper if the intestine were *not* heavy from congestion and enlarged by distention; but when such a condition exists, I think enterotomy would be preferable to "eventration," or to the emptying of the gut by incision, as proposed by Greig Smith.

DANGERS OF SIMPLE EXTRACTION OF CATARACT.—In an article on this subject Dr. HASKETT DERBY, of Boston, says that he has laid down the following principles for his own guidance:

1. He would reserve simple extraction for those cases in which the cataract is ripe, the nucleus large, the patient tranquil and amenable to discipline.

2. After the operation, the application of the bandage should be slightly delayed, the object being to ascertain whether the iris, once replaced, shows any tendency to again prolapse. If it does so, it is to be at once excised.

3. Eserine is to be applied directly to the eye immediately after the operation, and dropped in the

¹ Vide Le Gros Clark on the "Mechanism of Respiration," *Proc. Royal Soc.*, 1872, a paper too much overlooked.

inner corner of the eye, without separating the lids (as recommended by Schweigger) for the three following days.

4. Greater quiet on the part of the patient is to be insisted on than has been the case after the operation of Graefe.

5. The eye needs to be inspected much sooner, certainly by the end of the third day.

And even if these or similar rules be followed, I cannot resist the belief that for the average surgeon, and in the present state of our knowledge, simple extraction at the best involves an element of danger that is wanting in the method of Graefe. The successful extraction without iridectomy is unquestionably the more brilliant of the two methods, and the patient thus cured a more striking exemplification of surgical skill. A greater familiarity with the new operation may cause the risk to assume inconsiderable proportions. But some risk is likely to always remain. It is like the old question as to the relative advantages of ether and chloroform: the latter easier to transport, pleasanter to take, quicker in its effect, and occasionally, alarming in its consequences.—*Boston Medical and Surgical Journal*, Feb. 23, 1888.

THE ETIOLOGY OF GASTRIC ULCER.—Impressed by the fact that women employed as cooks so frequently suffer from gastric ulcer, DECKER (*Fortschritte der Med.*, B. v. 415) instituted some experiments on the action of hot foods in producing the disease. Two dogs were repeatedly fed through the stomach tube with semi-solid food heated to 120° F. The first received nourishment in this way four times, and the other eight times. At the autopsy of the first dog the mucous membrane of the stomach appeared normal in all parts, except at the lesser curvature, where there was situated a hyperæmic spot, about four-tenths of an inch in diameter, caused by a hæmorrhagic extravasation between the mucous and muscular layers.

In the second dog there was found a dark-red area on the posterior gastric wall, about the size of a quarter of a dollar. The mucous membrane over it was shrivelled, and resembled felt, and had been somewhat separated from the muscular layer by the occurrence of hæmorrhage between them. In the pyloric region were two typical gastric ulcers, extending to the serous layer. The author considers the hæmorrhagic infiltration, the shrinking and elevation of the mucous membrane, and its final destruction, to be the three phases in the formation of gastric ulcer.

In connection with Decker's experiments the observations of Ritter are of interest (*Zeitsch. f. kl. Med.*, B. xii., H. 5, 6, 592). There are a number of clinical observations which render it almost certain that gastric ulcer can be produced by violence acting through the abdominal walls. Several such cases have been studied in Leube's clinic, and an autopsy of Hofmann's offers additional evidence in the same direction. Ritter made some experiments on dogs to prove that ulcer could actually be brought about in this way. The animals received a rather heavy blow over the region of the stomach, and chloroform

narcosis was then continued until death resulted. The autopsies, revealed regions of hæmorrhage beneath the mucous layer, separating it from the tissues below. There is no doubt that the gastric juice would have soon produced ulcers at these spots, had the animals been allowed to live.

The action of trauma in producing ulcer is probably connected with the quantity and quality of the gastric secretions. Then, too, a more chronically acting trauma, such as disturbance of the circulation, plays, perhaps, a more prominent rôle than has been ordinarily supposed; though it is difficult to understand why chlorosis should lead to circulatory disturbance oftener than do pulmonary or cardiac diseases.

It seems very probable that the use of the corset is also a frequent factor by pressing the stomach against the vertebral column. This, combined with the pressure of the food toward the pylorus, and the anæmic condition of the mucous membrane in chlorotic women, may be sufficient to deprive the part of blood to such a degree that the gastric juice begins to act upon it.—*American Journal of the Medical Sciences*, January, 1888.

UNEQUAL WIDTH OF THE PUPIL IN INTERNAL DISEASES.—DR. F. PASTERNATSKY, from observations made at the clinic for diagnosis and general therapeutics of Prof. Ischndowsky (*Arch. Ophth.*, vol. xvi, No. 3), gives the following: He generally found unequal width of the pupil in those constitutional diseases in which there is a distinct anatomical lesion, generally on one side only (croupous pneumonia, pleuritis, renal colic, affections of the heart and liver). The various diseases may be ranged as follows, as regards the frequency of occurrence of this symptom: In croupous pneumonia, inequality of the pupils occurs in 85 per cent. of all cases; in heart disease and aneurism of the aorta, in 61 per cent.; in pleurisy, in 52 per cent.; in catarrhal chronic pneumonia, in 38 per cent.; in acute rheumatism of the joints, in 25 per cent.; in catarrh of the respiratory passages, in 25 per cent.; in scurvy, in 16 per cent.; in typhus fever, in 16 per cent.; in febris recurrens, in 15 per cent.; in typhoid fever, 13 per cent. In croupous pneumonia the pupil of the affected side is larger in the beginning of the process; the maximum of dilatation is reached at the height of the disease. Shortly before the crisis, and during the latter, the pupils become equally wide, while during convalescence the pupil of the affected side becomes smaller. The author believes that the inequality of the pupils in internal disease is a reflex phenomenon in close connection with the process of disease, the nature of which has not yet been determined.—*Dublin Journal of Medical Science*, January, 1888.

TREATMENT OF ARTICULAR RHEUMATISM.—As the result of much experience AUFRECHT has come to use salicylic acid in acute rheumatism, to the exclusion of other drugs, and with complete success. He gives the acid in full doses, gr. 90 a day for the first two or three days, and gr. 45–60 a day for the fol-

lowing eight or ten days. This course could not be carried out in all cases however, since burning pain in the stomach, vomiting, tinnitus aurium, or dyspnoea prevented the use of the drug. Nor could salicylate of soda, in corresponding doses, be used in these cases, since it caused the same disagreeable symptoms, and was not so effective in keeping down pain and fever.

When salol was introduced Aufrecht tried it, and with improvement in some respects. It caused but little local or general disturbance, and its use could be continued as long as desired; one patient took gr. 3500 in doses of gr. 90 a day. But in acute polyarthritic cases salol was not so effective as salicylic acid; for while the latter generally subdues pain and fever in twenty-four hours, salol requires three or four days, though the pain is greatly ameliorated in a shorter time. Still, in consequence of its many advantages, Aufrecht used salol as routine treatment until he had a fatal case of acute endocarditis—which he had not met with in 600 cases treated with salicylic acid. Since that time he has adopted a mixed treatment. Acute cases receive 90 gr. of the acid in each of the first two days, and afterwards the same amount of salol; but later, while the patient is still in bed, the salol is reduced to gr. 60 a day. Since salicylic acid is generally well borne for two days, this method of using the drugs seems worthy of trial as routine practice. Of course, if the acid can be taken agreeably it may be continued.

Salol is in every way preferable in chronic articular rheumatism, since by its use the dangers of the prolonged use of the acid are avoided, and there is more hope of a permanent cure.—*Deutsche med. Wochenschrift*, Jan. 12, 1888.

ACETANILIDE (ANTIFEBRIN) IN FEBRILE DISEASES. DR. ADEMSKI (*Wratsh*, 1887, No. 25; quoted by *Bull. Gén. de Thérap.*, January 15, 1888) narrates his experience with acetanilide in various febrile diseases. Amongst them were 4 of typhoid, 3 of acute rheumatism, 2 of pleuro-pneumonia, and 1 each of intermittent pleurisy, phthisis, and erysipelas. Not all patients bore the remedy well, and in one case of acute rheumatism a dose of sixty centigrammes (ten grains) brought on symptoms of collapse. The temperature was invariably lowered. A dose of two grains every hour rapidly lowered the fever heat. The pulse is lowered from ten to thirty beats per minute, and the respirations may be brought down from twenty-six to fourteen. Sweating was a constant result. In large doses acetanilide induces hypnotic effects, and in such cases as acute rheumatism and erysipelas, manifests an anodyne action. Diuresis was a symptom in the majority of cases. The urea was lessened, but the total output of nitrates was increased; the phosphates, the chlorides, and the sulphates were diminished in quantity. The diuresis for the most part consisted, therefore, in a mere increase of the urinary water.—*Am. Journal of Med. Sciences*, March, 1888.

STIMULANTS TO BE AVOIDED IN THE TREATMENT OF SKIN DISEASES.—In an article on diet in cutaneous

affections, by DR. G. H. FOX, the following suggestions occur: One very important point to be considered in preparing a diet list for patients with skin disease is the effect of alcohol, tea, coffee, and tobacco in retarding tissue metamorphosis. To improve the nutrition of the skin, it is desirable that the processes of waste and repair be carried on without cessation. When alcohol or other stimulants are consumed to any extent, this desirable change or reconstruction of tissue is arrested, and the various organs of the body are impaired in the performance of their functions. The effect of beer upon an eczema is as marked as it is upon a gonorrhoea. Dr. Fox has sometimes thought it better for a patient to drink a whole bottle of whisky than a single glass of malt liquor. In cases of pruritus, in private practice, the author has fallen into the habit of forbidding all stimulants, on the ground that they do no good and may do harm. In charity practice it has often struck him as the height of folly to prescribe medicine for patients who are living largely on tea and beer, and whose symptoms would speedily disappear under a judicious regulation of diet. Indeed, it is difficult to appreciate what dietetics will do in the treatment of cutaneous and other diseases unless we move, for the time being, a suspension of the Pharmacopoeia.—*Dietetic Gazette*, January, 1888.

PENETRATING GUNSHOT WOUNDS OF THE CHEST.—DR. GOUZIER has published some observations and statistics regarding the penetrating gunshot wounds of the chest occurring in the French expeditions to Formosa and Tonquin in 1883-85. From his work we gather that such wounds showed a mortality of 10 per cent., which is only about one-sixth of that due to similar wounds in recent European wars and in the American war. Apparently, as he suggests, the general employment of antiseptic methods was the cause of this great amelioration. Chest wounds from revolver balls of seven millimetres in diameter generally proved comparatively harmless. Traumatic pleurisy and pneumonia usually terminated favorably, but hæmorrhage, empyema, and compound fractures of the ribs gave much more serious results. He found that the best practice was not to explore unless it was necessary to extract the ball, and not to attempt extraction unless the ball was just beneath the skin or was setting up dangerous complications. In ordinary cases he found the best plan was to close the wound antiseptically; but if there were empyema, to make a counter-opening and to wash out and drain the pleural cavity. Warm antiseptic baths were also found very useful in Tonquin.—*Lancet*, Jan. 7, 1888.

LANOLIN AND BACTERIA.—GOTTSTEIN has found by experiment that lanolin is not decomposed by the agencies that commonly destroy fatty matters, and that the skin to which lanolin has been thoroughly applied is less likely to be invaded by poisonous germs and materials than when lanolin is not applied.—*Therapeutische Monatshefte*, Jan., 1888.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MARCH 17, 1888.

ACTION OF INDUCTION CURRENTS IN SUBCUTANEOUS INJECTIONS.

For many years there has been a good deal written and said as to the best means of using subcutaneously certain drugs, such as quinine, ergotin, arsenic, ether, camphor, preparations of mercury, and others, without having unpleasant local results follow the injections, but no method that has been suggested hitherto has given favorable results. Physicians that have treated syphilis by the subcutaneous use of preparations of mercury know that the chief difficulties and disadvantages of the method lie in the fact that these preparations cause trouble at the site of the injection.

A solution of the problem has been recently offered by DR. WACHSNER (*Die Wirkung des elektrischen Induktionsstromes auf subcutane Einspritzungen*; *Deutsche medicinische Wochenschrift*, No. 51, 1887), who proposes to increase the absorptive powers of the tissues by the electric induction current, so that the foreign body will be more quickly removed, and the injected solution act more quickly and with more certainty. Careful dissection of the portion of the skin immediately over the subcutaneous cellular tissue shows that there is an apparatus in connection with the cellular tissue that has the power of strengthening the physiological functions of the vessels, and of causing an acceleration of the stream through them. This is a muscular apparatus that can be made to contract by an electric irritation. We know that the muscles are motive powers for the lymph streams, and the passive movements

of muscles capable of causing excitation are more energetic and powerful upon the movement of currents in the vessels than its vital contractions. When such a muscle is made to contract, it of course becomes shorter and thicker. This thickening exerts pressure on the lymph and blood vessels of the skin above the muscle, and these vessels are thereby emptied of their contents. When relaxation takes place, there occurs a quick and energetic imbibition, and all the vessels, the cellular tissue, and the muscle become filled, and the structures in the vicinity are thus affected by the movements and changes of the muscle. When, therefore, a subcutaneous injection is made, and these muscular contractions are provoked, the foreign body is soon disposed of, and disturbances from it are prevented. The return of a portion of the solution to the site of injection is prevented by the valves of the vessels, so that the solution is pressed and carried forward toward the general circulation. A proof of this suction-power is shown by electrization of the diaphragm, or phrenic nerve, in cases of asphyxia by chloroform, illuminating gas, drowning, etc.; the action of the diaphragm draws air into the lungs.

For provoking these muscular contractions the electric induction current is the best means. The constant current requires a large number of elements, and muscular contractions are provoked only on the opening and closing of the currents; and what is needed in the cases of which we are speaking is that the current oscillations should take place in the smallest periods of time possible. In his experiments Wachsner used the Leclanché apparatus, which he considers far preferable to any other battery. For the negative current a small electrode must be used, in order to diminish the resistance. A considerably larger electrode must be used for the positive current. Direct faradization—faradization of the nerve endings in the muscles—should be practiced. In order to bring the current into the neighborhood of the superficial muscular nerves, it is advisable to strengthen the conductive power of the skin, and this is done by moistening the skin immediately before the use of the electric current with a warm salt solution, and by allowing the electrodes to remain for one or two minutes in a glass filled with this solution. By the use of this solution the pores of the hair follicles and of the sweat and sebaceous glands are rendered patent for passage of the current. The site for the injection should be over some powerful muscle, such as the gluteus or the latissimus dorsi. When in the gluteal region it is better to carry the injection through the fascia into

the muscle; but in other regions it should be made in the subcutaneous cellular tissue. Of course it is understood that the needle must be very sharp, and must have been previously disinfected with boiling water, and then thoroughly dried. Immediately after the injection the moist electrodes are applied, the positive to neighboring tissue, while with the negative the operation strokes the seat of injection with considerable pressure. At first a weak current is used, and this is increased gradually until the elevation made by the injection disappears. The sensitiveness and pain usually disappear entirely in four or five minutes, the skin can be pulled up in folds, and should some little infiltration show itself, this can be completely dissipated by using the induction current two or three times.

Wachsner has used this method more than a thousand times, in 45 cases. Of the cases there were 25 of syphilitic disease, 12 cases of hæmorrhage, and 3 of nervous phenomena. In the syphilitic cases a 1:100 solution of sublimate was used, from 8 to 9 mgr. of sublimate being used for each injection. In the cases of hæmorrhage he used a solution of ergotin, in equal parts of glycerine and water, 0.1 gr. being injected. The camphor used for injection was dissolved in 96 per cent. alcohol. It may be suggested that this use of the induced current would be of great service when the blood-injections recommended and used by von Ziemssen are practiced. If the method be as valuable as would seem at first sight, it is possible that in many cases, as Wachsner suggests, the stomach will have to perform only its normal work of receiving and digesting food.

PUBLIC WEALTH VS. PUBLIC HEALTH.

Less than a month ago a notice appeared in the obituary columns of the daily papers of this city, showing that on February 3, 6, and 15, the three children of a family had died of diphtheria in Chicago, their ages being 6, 3, and 1 years respectively. But this announcement caused no commotion or public talk in the city, and certainly none in the State. The matter was not brought before Congress, nor was there a meeting of State Governors to discuss the matter. It does not appear that the family was quarantined, nor that any investigation was made of the origin of this outbreak of diphtheria. Beyond the family left childless no thought seems to have been given to the fact that three children have been carried off by a preventable disease.

About two years ago some one discovered that a cow somewhere down in the State of Illinois had

pleuro-pneumonia—at any rate, it had a lump on its under jaw. There was immediately a great commotion in the State, and in adjoining and distant States. Telegrams were sent to Washington, and Congress made haste to pass a bill, creating a new official with a salary, and added him to the Department of the Interior, making this new official a sort of Bureau of Animal Industries; and more than this, the business of the cattle-drovers at the Chicago Stock-Yards was temporarily paralyzed in order to see if some other cows might not take pleuro-pneumonia from the one cow. An embargo was laid on cattle from the place where the cow with the swollen jaw was found. The Bureau of Animal Industries seems to have gone out of existence, and it was probably forgotten until a short time ago, when it was found that the embargo laid in 1886 has not been removed.

Cattle are valuable animals, and it is very important that, since we use them for food, they be kept as free from disease as possible. But are they more valuable than children? Is it more important that cattle be kept healthy, and free from preventable diseases, than children? One diseased cow, it may be said, may cause disease in many human beings. The same may be said of one child sick with an infectious disease. But cattle are worth money, and their loss is a positive pecuniary loss to the owner. The same, and to a very much greater extent, is true of children.

How many cattle die annually of pleuro-pneumonia as compared with the number of children that die of diphtheria—not to mention the other infectious diseases? Is there any comparison between the numbers? Do not the examples that we have cited remind one of straining at a gnat and swallowing a camel? Do not the people of this country owe it to themselves to have more efficient and a more uniform system of supervision of the health of the people?

There is another thing in connection with this question—the compulsory notification of infectious diseases. Whether a municipal government does right in compelling such notification without compensation or not, the fact remains: it is the duty of the citizen to obey the laws. It is probably the case in every city in which there is compulsory notification, and certainly is the case in Chicago, that physicians are influenced *not* to report infectious diseases by interested parties. It is not long since a physician (an irregular) was called to see a child sick with measles in a certain hotel in Chicago. He was called by the advice of the proprietor, and was influenced by the proprietor not to report the case, though at

the time there were a number of small children in the hotel. The matter was, as far as possible, kept a profound secret in the hotel. This is one way in which unthinking, careless, ignorant people, aided by legal physicians, toy with human life.

Suppose it had been smallpox instead of measles. The stake for the hotel proprietor to play for would have been so much the greater. People that will not run from measles will run from smallpox. The people living in the hotel would, in all probability, have been exposed to the infection before learning of its presence, and then would have scattered themselves around the city, to other hotels and boarding-houses, thus creating new centres of infection. The punishment for the concealment of infectious disease by a householder, and for non-notification by a physician, should be so severe that such things will be unprofitable in the extreme. Then, perhaps, there would be a considerable reduction in the death-rate from such diseases.

THE DEATH OF HENRY BERGH.

On Monday, March 12, Mr. Henry Bergh, long prominent as the President of the American Society for the Prevention of Cruelty to Animals, died at his home in New York City. To the medical profession, especially in the State of New York, he has long been known as the tireless and unremitting opponent of any and all experiments on animals. But while his love for animals was at times carried to an excess of enthusiasm and zeal, and while he and his agents may have been at times more officious than judicious in enforcing the principles of his society, it must be remembered that his was a work that required enthusiasm and the most ardent zeal, that popular prejudice was against him from the first. Bergh was undoubtedly one of the great reformers, and his work must be measured by general results. To the hundreds and thousands that stand ready to look after the wrongs of human beings, there are but few—very few—that take any thought of the rights and wrongs of dumb brutes. Bergh aroused and quickened the dormant sentiments of pity and kindness for animals. He went about his work in the face of a storm of sneers, ridicule, and abuse that would have discouraged men with less courage, and not so large of heart. It may be truthfully said of him that his work has bettered humanity; on the one hand his influence has brought to his aid the better and more refined classes of society, while his power taught human brutes that they could not wilfully torture dumb ani-

mals. Municipal authorities have recognized the humane influence of his work, and State legislatures have made new laws for the protection of dumb animals, police powers have been granted, and dead laws have been reanimated.

Looking at Bergh's work as a whole it must be said that it was, and still is, a great work. Scientific men cannot, of course, look upon his attempts to abolish experiments on animals as other than the results of an honest though misguided zeal—the results of trying to fight an imaginary evil, a practice in which he could see nothing good. But in the legitimate field of the society founded by him there is still much work to be done—and outside the City of New York.

PROPERTY IN LECTURES.

IN THE JOURNAL of February 11, we asked and commented upon the following questions:

"Is it proper for a medical reporter having access to the ordinary clinical lectures in a hospital, to attempt to report in full the clinical lectures of a member of the hospital staff, and furnish the same for publication, without submitting a line of his manuscript to the lecturer for his approval? Is it proper for editors or publishers of medical journals to receive and publish what purports to be verbatim reports of clinical lectures without any evidence that such reports have been approved by the lecturer, and without even allowing him an opportunity to read the galley proofs?"

In regard to this matter we have received the following from JUDGE M. D. EWELL.

"In answer to this question of propriety permit me to say that this matter not infrequently comes up before Courts of Chancery for decision. There is absolutely no doubt whatever that in thus publishing clinical lectures without the lecturer's consent a legal wrong is committed, for which the courts give an adequate remedy. Should your readers desire the authorities for this statement I shall be pleased to refer to them; but I will not otherwise take up your space."

SOCIÉTÉ DE STOMATOLOGIE is the name of a medical society organized in Paris on February 6, for the purpose of studying the diseases of the mouth, the dental apparatus and the adnexa. Dr. Magitot was elected President, and Dr. Galippe, 65 Rue Sainte-Anne, Secretary. Laryngologists, rhinologists, otologists, ophthalmologists, and specialists in the field of stomatology may join the Society.

VOLUMETRIC RICHES.—The *Gazette de Gynecologie* says: Le Dr. H. Keane a établi, au dernier meeting de la Société Gynécologique Américaine, que la littérature gynécologique s'était . . . enrichie, pendant ces huit dernières années, de 804 livres et 7,500 articles de journaux et brochures!!!

ASSOCIATION ITEMS.

PROPOSED AMENDMENTS TO THE CONSTITUTION OF THE ASSOCIATION.

It must be remembered by the members of the Association that several amendments to the constitution will come up for adoption at the approaching meeting in Cincinnati. As they met with no opposition at the last meeting and would then have been adopted had it not been for the rule requiring all amendments to the constitution to be before the body for a year, it is probable that they will be adopted and become part of the law of the Association at the next meeting. The reasons for the amendments were fully stated by the Special Committee that proposed them. The complete report of this committee can be found in No. 26 of vol. viii of *THE JOURNAL*. The proposed amendments are as follows:

A substitute for an amendment adopted in 1884 to the second section of the constitution:

Members by Application shall consist of such members of the State, County and District Medical Societies entitled to representation in this Association, as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing signed by the President and Secretary of the society of which they are members, and the amount of the annual membership fee, \$5. They shall have their names upon the roll and have all the rights and privileges accorded to *Permanent Members*, and shall retain their membership on the same terms.

From the *fifth section of the Constitution*, relating to "*Standing Committees*," the *first and third paragraphs* should be stricken out, leaving intact only the second paragraph, relating to the "*Committee of Arrangements*." In place of the first paragraph to be erased, your committee recommend the insertion of the following important provision, viz.:

The General Committee or Council shall be composed of *two members* from each State and Territorial Medical Society entitled to representation by delegates in the Association, and from the Medical Departments of the U. S. Army, Navy, and Marine Hospital Service. They shall be chosen by the members registered and present at each annual meeting, from each State, Territory, and from the Medical Corps of the U. S. Army, Navy, and Marine Hospital Service, acting separately, on the third day of each annual meeting; each delegation reporting the names of the members chosen to the Permanent Secretary of the Association on the same day, that they may be announced by him at the opening of the morning session of the fourth day. At the first elec-

tion each delegation shall choose *two* members of the General Committee, one of whom shall serve *one* year and the other *two* years, and at each annual election thereafter one member shall be chosen to serve for two years, thus making the term of office of members of the General Committee *two* years. It shall be the duty of the General Committee, thus constituted, to organize by choosing annually a Chairman and Secretary, and such sub-committees as may be found necessary to facilitate the work that may be assigned to it; to meet annually at the place and on the day preceding each annual meeting of this Association, and as often during that week as may be necessary; to nominate, on the third day of each annual meeting, all the general officers of the Association (none of whom shall be members of its own body), the members of the Committee of Arrangements, the Committee on Necrology, seven members of the Judicial Council, and three members of the Board of Trustees for Publication for election by the Association; to recommend the place and time of holding the next annual meeting; and to consider and report upon all subjects that may be referred to it by vote of the Association. The presence of one-third of the whole number of members elected to the General Committee shall constitute a quorum for the transaction of business. If, at any annual meeting of the Association, it shall be found at the close of the general meeting of the first day that a quorum of the General Committee is not present, it shall be the duty of the President and Permanent Secretary to fill the vacancies in the Committee temporarily by selections from the lists of delegates registered as present from the States to which the vacancies belong.

In place of the third paragraph, the following:

The *Board of Trustees* shall consist of nine members, three of whom shall be elected annually on the nomination of the standing General Committee, and shall serve for three years. It shall be the duty of the Board to provide for and superintend the publication and distribution of all such proceedings, transactions, and memoirs of the Association as may be ordered to be published, and in such manner as the Association may direct; and in doing this, it shall have authority to appoint an editor and such assistants, and determine their salaries, and procure and control such materials, as may be necessary for the accomplishment of the work assigned to it. To further facilitate its work, it shall be the duty of the Secretaries of the Association and of the several Sections, during each annual meeting, or as soon thereafter as practicable, to deliver to the Board, or such editor or agent as it shall appoint, all such records of proceedings, reports, addresses, papers, and other documents as may have been ordered for publication, either in the general sessions or in the Sections. All moneys received by the Board of Trustees or its agents, resulting from the discharge of the duties assigned them, must be paid to the Treasurer of the Association, and all orders on the Treasurer for disbursements of money in any way connected with the work of publication, must be endorsed by the President of the Board of Trustees.

It shall be the further duty of the said Board of Trustees to hold the official bond of the Treasurer for the faithful execution of his office; to annually audit and authenticate his accounts, and present a statement of the same in its annual report to the Association; which report shall also specify the character and cost of all the publications for the Association during the year, the number of copies still on hand, and the amount of all other property belonging to the Association under its control, with such suggestions as it may deem necessary.

Should these provisions be adopted by the Association, the Permanent Secretary should be authorized to substitute the name "General Committee" for "Nominating Committee," wherever the latter occurs in other parts of the Constitution and By-Laws, and similarly the "Board of Trustees" for "Committee on Publication."

If these amendments are adopted, it will not change the mode of nominating officers for the meeting in 1889, since the proposed General Committee or Council which by the amendments will hereafter form the Nominating Committee, must be elected on the third day of the meeting, and will be announced on the fourth or last day, which would be too late for them to make nominations at the Cincinnati meeting. If this General Committee is formed, it should, however, organize so that it will be an active standing committee, to do such business as may be necessary between the meetings of 1888 and 1889.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, March 1, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

DR. H. A. KELLY exhibited

AN ASEPTIC TWO-WAY CATHETER.

A two-way catheter, which will conduct and discharge water and solutions with the utmost freedom and at the same time allow of perfect and ready cleansing after use, is a great desideratum. In the light of the antiseptic surgery of to-day the use of such two-way catheters as were commonly found in the surgeon's bag a few years ago, is in the highest degree dangerous, owing to the necessarily painfully tedious process of cleansing, and the impossibility of ever being able to assure ourselves that they are clean. One of the best ever devised for the use of the gynecologist is Bozeman's. This has been modified by Fritsch and Oldshausen in such a way that the delivery pipe and discharge pipe are two separate pieces, so made that the delivery pipe enters the larger discharge pipe and is held in place by a cap which is screwed down on it while in use. This will be understood better in examining my modification. The objection to this still held, that although

easier to clean than any previous forms, it was still difficult, and impossible to assure oneself. I have now added my own modification to this instrument, making it now perfect in its utility and answering all antiseptic requirements.

The syringe as constructed by me consists of three parts. First, the delivery tube which conducts the stream from the hose connected with the reservoir into the uterus. This tube is well curved, and at its entrance is furnished with a knob to hold the hose better. Its extremity ends in a button, with a series of holes around and a little below the outer margin, in the form of a rose, so placed that the stream is thrown out on all sides and directed a little backwards. The remaining two pieces are the two lateral halves of the exit pipe, which is attached very simply by entering each end in the shallow collar under this rose, bringing them together around the inlet pipe and screwing the nut down on the thread on their upper end.

Each side has a fenestra in it, near the point, and is scooped out near its upper end, so that when the two are fitted together there is a good sized hole here. When in use, water flies with force from the holes at the end, washes with it debris and fluid, which enter at once the large fenestra on the sides, are washed down and out of this large hole into the receptacle. When out of use the cap is unscrewed, the halves fall apart, and every part which has come in contact with infection is at once exposed and readily cleansed. The interior ought to be as highly polished as the exterior. Mr. Gemrig, of this city, has made these instruments for me in a highly satisfactory manner. He has made one of solid silver for Dr. Sweetnam, of Canada, which I exhibit here, with that I am now using as well as the older form.

If the nomenclature is to be kept up as in the past, it is the *Bozeman-Fritsch-Oldshausen-Kelly Catheter*.

DR. KELLY also exhibited

A COTTON PACKER.

This instrument has been many months on the shelf by my examining table, and is one of the few I am constantly using. I have shown it to a number of my friends, and at a meeting of the alumni of the Woman's Hospital at New York this winter. Its use is simply to pick up a loose wad of cotton placed near the vaginal outlet, and with the vagina properly exposed the uterus redressed, to carry it up into place in the fornices and pack in one wad after another with perfect exactitude and any degree of firmness required. It is made of a delicately tapering handle which balances nicely in the hand, terminating in three diverging tips, a little flattened on the upper and under surfaces.

DR. B. C. HIRST exhibited

THE PLACENTA FROM A CASE OF UNIOVAL TWINS.

It was very large in extent, having about twice the ordinary dimensions of a placenta. It formed one mass, with the most intimate anastomosis between the two sets of fetal vessels. There was in this case hydramnion of one fetal sac.

DR. HIRST also showed

A PARIETAL BONE PRESENTING A SPOON-SHAPED DEPRESSION.

It had been taken from an infant that died about two days after birth. The labor had been a difficult one, terminated by the forceps; the child had presented by the vertex in R. O. P. position; the pelvis was slightly flattened, head large, O. F. circumference $36\frac{1}{2}$ ccm. At the corresponding point internally there was a deep broad depression of the brain substance. The child apparently died from congestion of, and serious effusion into, the brain.

DR. WM. GOODELL remarked that Ambrose Paré had compared these depressions to the indentation on kettle-drums. The indentation in this case was very typical. After turning in the flat and narrow pelvis, these indentations were very marked. They occupied then the temporal region and not the parietal, the shorter bi-temporal diameter being the one implicated. Hence in turning two mechanical advantages resulted, the small end of the cephalic wedge offered at the conjugate and also a cephalic diameter shorter than the bi-parietal.

DR. JOHN C. DACOSTA wished to know if Dr. Goodell thought turning could always be done in these cases? He spoke of a case that had occurred in his practice when the bone was much more depressed than in the specimen shown. The whole left side of the head was bulged in by a large fibroid of the uterus, which fitted into the depression like a mortise and tenon joint. The pelvis was of good shape and roomy, os uteri wide open and soft, and yet the head, which was at or above the superior strait, in L. O. A. position, would not descend on account of the tumor. As the woman was in good condition and nothing seemed to be going wrong, he let her alone for a time. After a little while, by the aid of some manipulation, the head began to unlock from the tumor and rotated from O. A. to O. P. position, and the child was delivered alive.

This case could not have been turned (as membranes had been ruptured and uterus gripped the child's body itself), and even if it could have been, there would probably have been a dead baby from pressure on the cord during the long delay that would ensue on delivering the head, as the tumor would most likely have locked under the baby's chin. The forceps could not be put on, on account of obstruction to the left side by the tumor.

DR. GOODELL thought that Dr. DaCosta would have had less trouble if he could have turned the child. He did not think the neck would have been caught. He had been speaking before of the mechanical advantages only, and not of the difficulties in the performance of version.

DR. LONGAKER presented the following for DR. HOLMES:

The case of Mrs. B., æt. 50, married at 15 years, multipara, menstruation always scant and painful, is remarkable on account of a series of reflex symptoms, of death from exhaustion and from pain, without organic disease other than ovarian, and of simplicity of operation needed as revealed by autopsy.

Mrs. B. consulted me April, 1886, having been treated elsewhere for muscular rheumatism. Pains were of lancinating character along left sciatic, shooting down to ankle. Examination showed ovarian tumor, probably cystic. Prof. Goodell confirmed diagnosis and advised operation, which patient then and subsequently refused. The chief complaint was at first the pain posteriorly along left leg and thigh, which finally involved similar relations on right side. In the course of a few months a persistent tremor attacked both lower extremities, at first alleviated by manual pressure, subsequently not, and later still extended to arms and hands and later yet to muscles of face and lips, giving much the appearance of violent chorea, interfering markedly with clear enunciation.

During the latter part of life there was oft-repeated and painful micturition, with bloody urine, with violent pain starting in lumbar region and shooting along into the bladder and urethra, raising a strong suspicion of renal calculus.

This, with the other lancinating pains, the tremors and nervous exhaustion consequent upon the many months' illness, caused great suffering, the patient often wringing her hands and grasping her hair in agony. Hypodermics of morphia, $\frac{1}{4}$ to $\frac{1}{2}$ gr., gave markedly greater relief than same doses by mouth or rectum, even frequently repeated. The apparent increase of tumor was very slow.

Autopsy indicated only slight omental adhesions. Kidneys healthy. The bladder, uterus, and the two attached cysts were removed a few hours after death. The dermoid cyst has a long, slender pedicle, attached to the left cornu uteri. It was situated on the right side of the spinal column, opposite the third and fourth lumbar vertebrae, covered by loops of small intestine and by omentum, to which latter it was slightly adherent. It was at first supposed to be a floating kidney which had undergone conversion into a cyst. Its size, shape and location were suggestive of such an origin. The cyst contained chocolate-colored sebaceous matter. No hair or teeth. The wall contained calcareous plates. The right ovary is the seat of a multilocular cyst the size of an average full term foetal head. The corpus uteri is undeveloped, the cervix constituting the larger portion of the organ. Evidences of chronic cystitis were present.

DR. M. PRICE said that this question was coming up daily; cases of pelvic disease were being constantly treated by the general practitioner for malaria, rheumatism, neuralgia and other kindred diseases, without making any investigation into the actual condition of the patient. In fact, malaria is becoming extremely fashionable, when there is no apparent reason for the condition. He was then treating a case of ovarian disease in a lady now 47 years old; was married at 15 years, contracted gonorrhœa from her husband at that time; has ever since remained sterile, with scant menstrual discharge and great pain from the approaches of her husband, sometimes the pain being agonizing. She suffers at times from severe pain running down the left leg. Upon examination the ovary was found to be as large as an orange, ex-

cessively tender, and when pressure was made in bimanual examination the patient went into convulsions on the table. He did not know what relation this condition may have had in connection to the trouble in her early married life; of this he was sure, that it was the cause of her barren condition.

DR. LONGAKER also exhibited

THE POST-MORTEM SPECIMENS FROM A CASE OF CARCINOMA UTERI.

The following brief notes of this case are presented for Dr. J. S. Gibbs: L. A., married, æt. 39, always enjoyed good health until five years ago, when her last child was born. Since that time she had suffered much from pelvic pains. Menstruation had been excessive. Patient first seen in June, 1887, when a diagnosis of carcinoma of the cervix was made. The disease had invaded the vaginal walls and the pelvic cellular tissue.

From this date I saw no more of the case until February 6, 1888. She had been free from pain, but hæmorrhage persisted.

Vaginal examination revealed advance of the disease. It provoked such a profuse hæmorrhage that applications of Monsell's sol. were required to arrest it. When the hæmorrhage was under control, pledgets of cotton saturated with terebene and olive oil (1-4) were packed against the cervix according to the plan of Betrin, of Geneva. This medication diminished the offensive odor, but I strongly suspect it had something to do with the rather untimely demise of the patient.

In a few hours from the time of the application she went into a somnolent state from which it was difficult to arouse her, with almost complete suppression of urine and strangury, and death in thirty-six hours. A peculiarity of the case was absence of cachexia and emaciation.

Autopsy: The cervix was extensively infiltrated and ulcerated. The corpus shows a few nodules. The ureters are dilated, as are also the pelvis of the kidneys.

DR. G. E. SHOEMAKER thought that the statement that death was probably due to an application of terebene should be carefully considered. He was constantly using and observing the use of the drug internally in much larger quantities than could be absorbed from such an application, without sign of irritation. Might not the death from uræmia have occurred independent of its use?

DR. LONGAKER believed that the application of the terebene did hasten death. The strangury and suppression came on quickly after it had been used. The case lacked some of the ordinary symptoms of uræmia.

DR. WM. GOODELL exhibited

A SPECIMEN OF CONJOINED TWINS,

which had been presented to him by Dr. Junius F. Fuller, of Roxborough, N. C.

The specimen was a perfect one. The bodies were united at the hips and there were three feet in common. Some years ago an analogous living specimen of conjoined twins was on exhibition in this city, and he had brought them before his class at the

University and had given a lecture upon the subject. From investigations then made he found that this form of conjoined twins was not a very rare one, as Aldrovanus and other old writers had described and figured them. The specimen which he presented must have been aborted at the third month of utero-gestation.

DR. GOODELL also presented

A SPECIMEN OF HYDROSALPINX.

It was the largest specimen he had ever seen; although he had met with much larger specimens of pyosalpinx. The case had been treated by many gynecologists and the true condition had not been recognized. There had followed the operation a complete relief from pelvic pains, but menstruation had continued up to the present time. The periods were, however, becoming less frequent. Since it was contended by some eminent surgeons that, when menstruation continued after the removal of the uterine appendages, some of the ovarian stroma must have been left behind, he wished to call the attention of the Society to the complete extirpation in this case of both ovaries and tubes. Although the former were more or less adherent, it was evident from the specimen that not a particle of ovarian stroma was left behind.

DR. M. PRICE said he had seen two cases in his practice where the menstrual discharge did not cease after the removal of the appendages. In one case it lasted for a year and a half, in the other six months. He had no doubt but that Dr. Goodell's case would show the same result. There was but little doubt in the mind of most operators that the removal had not been complete.

PRESENTATION TO DR. GITHENS.

DR. W. H. GITHENS, who resigned the secretaryship of the Philadelphia Obstetrical Society the first of the year, after an uninterrupted service of eleven years, was presented this evening, in the name of the Society, with a very handsome mantel set, including clock and side ornaments, in recognition of the very valuable services he had rendered the Society during his long term in office.

OFFICERS FOR THE ENSUING YEAR.

President—Thos. M. Drysdale, M.D.
Vice-Presidents—Chas. H. Thomas, M.D.; J. C. Da Costa, M.D.
Secretary—J. M. Baldy, M.D.
Treasurer—Alfred Whelen, M.D.
Curator—T. Hewson Bradford, M.D.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, February 22, 1888.

W. W. KEEN, M.D., IN THE CHAIR.

DR. THOS. J. MAYS read a paper entitled

APEX EXPANSION VERSUS PURE AIR IN PULMONARY CONSUMPTION.

(See page 325.)

DR. W. W. KEEN: These are very practical ques-

tions presented for discussion. Change of climate involves expense, separation from friends, interruption of employment. Can we obtain equal benefits by home gymnastics or change of employment? There is also a novel question raised as to purity of air. These are points that should be discussed.

DR. WILLIAM OSLER: The last statement of the paper contains a very important truth. With imperfect expansion there is a liability to clogging of the interstitial circulation in the apices and accumulation of tissue debris which may afford a nidus for the development of the bacillus tuberculosis. The condition of activity of this interstitial circulation differs very much in different individuals. We know but very little yet of the conditions which determine the development of tuberculosis. In part, at least, it is like the old parable of the seed and the sower: the nature of the soil will favor, retard, or prevent the growth. That the bacillus of tubercle will not grow in every soil is demonstrated by autopsies in large general hospitals. At Blockley, we will find in every hundred sections, say, fifteen or twenty cases with the usual lesions of phthisis; in fifteen or twenty there are no excavations, the lung not extensively tuberculous, but at the apices are small areas of induration, caseous nodules, and a few peripheral military nodules. The soil has not been congenial, and the development of the bacillus was restricted. Without bacillus, no tuberculosis; and that opinion is shared by ninety-nine out of every hundred clinicians of the day.

DR. EDWARD MARTIN: While connected with the department of physical education at the University of Pennsylvania, I had an opportunity of studying the effect of exercise on chest development. Lads admitted with narrow lungs and supraclavicular depressions suffer, after moderate exertion, with embarrassment of pulmonary circulation. The right heart is congested and there is evidently blocking of the blood current in the lungs. After six or eight months of carefully regulated exercise, there is a change in the local condition; no more obstruction is offered to the right side of the heart than elsewhere; the blood-vessels respond to the extra demand put upon them. With this free circulation goes an increase of chest girth, from an inch to two or two and a half inches in six months. Inspiratory exercises are nearly always given these young men, especially those with that shape of chest which we are taught predisposes to phthisis. Among these exercises is prescribed deep breathing, with or without movement of the arms. The arm is raised from the body to a right angle by the deltoid. After that the lifting is done by the serratus magnus, the most important inspiratory muscle. As the arm is carried nearer to the head, the insertion and origin of the serratus are approximated and the muscle works at a disadvantage. For this reason expiration is practiced as the arms are carried up, and inspiration as they are brought down. Exercise should be made vigorous enough to stimulate the heart action. Slow motions, as a rule, do not strengthen the heart, but have a local effect, whereas the object in these cases is to make the circulation free and the air-tubes pervious.

DR. C. W. DULLES: Dr. Mays has done good service by calling attention to the fact that the conditions to secure which consumptives are recommended to live at high altitudes can be replaced by simple measures. My observation, though limited, corresponds with that of Dr. Mays, and I think that all of us have been struck with the fact that there is no direct ratio between the percentage of cases of phthisis and the breathing of impure air. We often see a number of persons huddled into small, unventilated rooms, with filth and drink and all the factors of disease, and yet apparently in blooming health. In such cases the men, who are engaged in active employment, and the children, who run about in the streets, enjoy better health than the women, who have less active exercise and who bend over wash-tubs or sewing work.

DR. GEORGE E. SHOEMAKER: I heartily agree with Dr. Mays that apex expansion is an important part of the treatment of incipient lung disease. A very important point is raised as to the action of rarefied air in expanding the apices. In localities that are warm, moist and low—like Florida, for example—there is no such effect, and almost the sole benefit, as far as the climate is concerned, is from the patient's ability to be outside all the time. Now would it not be better to send more of our patients to a climate where direct good is gained by the more thorough ventilation of the lungs, reserving for Florida the very weak and those liable to excessive hæmorrhage or to heart failure? In regard to impure air, we must remember that many of those persons who enjoy good health in spite of their home surroundings, live out of door most of the time, the children in particular, living upon the doorstep or in the street, except in stormy weather. In the same way at mountain and seaside resorts, the small and uncomfortable rooms drive visitors out into the air; and whether or not ozonized or rarefied, it is pure, out-of-door air.

DR. MAYS: It is rather unfortunate that Dr. Osler did not confine himself to the topic of the paper and discuss the main points of the subject in his usual able manner. I purposely avoided all except an incidental reference to the bacillus; but I must now say that I cannot accept the dictum, "no bacillus, no tuberculosis." It seems very strange that if the bacilli need a soil in which to develop they should be able to penetrate into that portion of the lung which is hardly ever expanded in phthisical patients. Why, if you take the two sexes and put them side by side in the same employment, do the men become diseased in greater proportion than the women? Why this fondness of the bacilli for one sex? I must also dispute that point that ninety-nine out of every hundred clinicians accept this dogma. Though born in Germany, the doctrine is already losing ground among the Germans.

I wish in conclusion, to make a statement which I should have embodied in the paper, that, according to the latest researches, the apices expand more in the recumbent than in the erect position; therefore, a person inhales more air during sleep than in waking hours.

DR. WM. S. STEWART presented

AN IMPROVED OBSTETRIC FORCEPS.

I take it for granted that there is a large majority admitting their necessity, and the great benefit they are to the lying-in patient. Therefore, I will content myself in endeavoring to point out the advantages of having parallel handles, so that the application of either blade first can be made at will, as the exigencies of the case may require. The improvement is not restricted to any special form of blade, but can as readily be applied to the straight as to the curved, its use being equally effective with either form.

The first object, for which I was most solicitous, was to be able to have an instrument that could be used readily in presentations in which it might be desirable to apply the second blade first, as sometimes in the second position of the head when jammed into the cavity of the pelvis and rotation to the antero-posterior diameter has been prevented by a narrow, contracted passage. In all such cases there will be no difficulty in applying and adjusting the first blade; but occasionally it is impossible to apply the second in this condition of the presentation, the only remedy being to reverse the order by applying the second blade first, running the risk of injury to both mother and child in the recrossing of the handles, in order that they may be locked before making traction. This we have overcome by having the handles made parallel to each other, and without overlapping, as in the ordinary instrument. Each handle has its own independent lock, the two being connected by a plain bar, which will admit of adjustment, no matter which blade is applied first.

To overcome the danger of slipping, and to secure the grasp on the fetus, it was necessary to devise some method of reversing the direction of the handles, in order that traction could be applied. To accomplish this a double lever was devised, one part on each handle, and each working on the same pivot or fulcrum; to this the traction is applied, resulting in a power perhaps superior to anything we could have expected.

The compression to the fetus is no longer in proportion to the power in the grip of the hand applied to the instrument, as in the cross-handles, but is regulated simply by the resistance to be overcome; consequently, all fear of the slipping of the instrument is obviated, and the only force that is necessary to be applied is for the delivery of the fetus, serving at the same time for compression and traction. The compression, however, is controlled by a shoulder made on the toggle-joint, preventing any risk to the child, and its limit corresponding to the position of the blades of the cross-handled instrument when the handles are in apposition. Should there be any irregularity of application, and consequent difficulty in locking, we have devised a coned hub with a winged nut, which, though the handles may be at an angle of twenty degrees, enables us to adjust them accurately. The advantages of this improvement, as experience has demonstrated, are summarized as follows: *First.* The application of either blade first. *Second.* The impossibility of the slipping of the blades when properly applied. *Third.* Moderate and even compression, the degree of com-

pression being regulated by the amount of resistance. *Fourth.* Greater facility for making traction.

DR. LONGAKER: The only advantage of this modification of Dr. Stewart's is that the forceps is not so likely to slip. This is due to the parallelism of the blades, which is maintained even though the blades be not on opposite sides of the child's head, and in very large heads where it is difficult to recross the handles. There is in existence another device for the same purpose—a very simple one—a mortise lock at the end of the handle. Personally, I think the forceps introduced by Sir James Y. Simpson can not be improved upon.

DR. PACKARD: I ought, perhaps, to speak with some diffidence on obstetrical matters, as my practice in that line has of late years been but limited. Yet I can but recall the teachings of Professor Hodge, and the extremely practical instruction given the students of my day by Dr. Joseph Warrington, which found abundant confirmation in my experience.

We were taught that the forceps should never be applied unless the os uteri was dilated or dilatable; that they should be introduced with the utmost gentleness, the surface of the child's head being the sole guide; that ready locking (and no force was ever to be used to effect this, was the test of proper application; that under no circumstances was any leverage to be exerted by means of the mother's tissues; that the left hand of the operator (applied at the lock, the tip of the forefinger against the child's head, to detect any slipping of the blades) should be the fulcrum, the instrument being then used as a double lever, so as, by a gentle swaying motion from side to side, to coax the child's head through the passage. This side to side movement was strongly advocated afterward by the late Dr. Albert H. Smith, whose experience and authority on such matters must be conceded. Under all circumstances, except in certain abnormal positions of the child's head, the blades were to be applied with their long axes parallel with the occipito-mental diameter; and they had to be accurately opposed to one another in order to lock. Now, it seems to me, in the light of my own experience, that the difficulty of recrossing the handles ought not to be such as to render a special mechanism needful in order to avoid it. And I cannot but think that the deviation of the blades from parallelism, however brought about, involves danger.

When the mother's forces are inadequate to effect delivery, I think the time has come to use the forceps; and to obviate the necessity of a long-continued grasping of the handles, they may be tied together with a handkerchief, or with any other convenient band, as soon as the blades are accurately applied to the head. The compression so made is often necessary to the delivery; and on several occasions I have myself felt the bones of the head give way under the grasp of the instrument, but the mother was unharmed, and the children lived. As to forcible traction, I have heard of the child's head being torn off; I have several times seen a strong man brace himself with one foot against the bed, and

apply his whole power to drag the child from the mother. In one case I have known this practice to result in the tearing away of part of the cervix, laceration of the vaginal wall, and permanent damage to the mother's local and general health. In the old style of forceps—and the Hodge pattern has always seemed to me the best—we had in each blade, used singly, a vectis; in one handle a blunt hook, an instrument often of great value; the other was a sharp hook, covered, when not in use, with a steel cap screwed on. Such a combination of instruments, which is very convenient in a practice involving long distances, cannot be, or at least is not, offered in the forceps presented by Dr. Stewart.

DR. GEO. E. SHOEMAKER: While this instrument is, no doubt, safe in Dr. Stewart's hands, it might not be so in those of others. That toggle joint is a very powerful mechanical appliance, and the "shoulder" does not limit its action until the blades are quite close together. A moderately large head would not let them get so near together, and a very violent and harmful compression would result from even moderate traction upon the handle.

DR. STEWART: In reply to the first speaker, among the original forceps as represented in the older works were those with parallel blades, but I do not know of anything like this instrument. Of course, I do not claim all the credit of this invention, but share it with the instrument maker, who carried out my ideas. I was induced to have such an instrument made because of a number of complicated cases which came under my care, especially a difficult one in which I was called to assist a friend, who had been trying all night to get on the second blade of the forceps in a very narrow pelvis, where the child's head was jammed (in the right iliac region), and would not rotate. I advised using the second or female blade first, which we did with precaution in recrossing the handles, and the delivery was speedily effected. I am not anxious to use forceps or to make lacerations. My rule is not to apply instruments as long as there is any rebound to the labor.

There need be no fear of the toggle-joint permitting the blades to approach too closely, as the shoulder can be adjusted to any desired distance. It is new to me that a fetus can be delivered without traction. If a wedge is all that is wanted, the toggle-joint is a better wedge than the cross-joint. The amount of compression is regulated by the necessities of the case. If the mother is left alone, she compresses the head of her child in her labor. In the cases (eight) where I used this instrument, I could not find a trace of its mark twenty-four hours after delivery. I would never use a handkerchief to tie the handle. I believe that in cases of contracted pelvis, where other instruments could not deliver, this could. I had such an experience with a mannikin, in which the outlet was too narrow; failing with the cross-handles, I delivered with my instrument.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, February 6, 1888.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

DR. ROBERT TILLEY read a paper on

MONOCULAR DIPLOPIA WITHOUT MANIFEST LESION OF THE AFFECTED EYE.

(See page 322).

DR. HAROLD N. MOYER: I have listened with a great deal of interest to Dr. Tilley's paper, and while I should prefer to hear it discussed by some one more familiar with the subject, I do not feel like letting a paper of this kind go without discussion. The condition of unilocal diplopia as described by the doctor is certainly rare; one that will come under observation but once in a lifetime. His conclusions regarding the pathology of the disease I think are fully justified. We cannot but look upon a lesion of this kind as other than an affection of the brain, and I was struck with the similarity in some of the conditions here described with the condition known as periodical ocular motor paralysis. In those cases we have some of the symptoms which are described in this. In this condition, associated with other peripheral disturbances, there is often distress in the stomach, pain in the eyes and even convulsions. Of the 18 or 19 cases on record four have come to the autopsy table, but the autopsies have not established any definite pathology; whether the lesion was basilar, cortical or nuclear, or the character of the lesion. I fancy it is much the same in this condition, the few autopsies that have been obtained are confusing as to the nature of the basic pathology, the real lesion in the nervous center. While I admire the doctor's exceptionally ingenious theory of an abscess connected with the third ventricle rupturing, I think it was not clearly shown that was the exact condition. It is ingenious, and in the absence of any other explanation it might be accepted provisionally.

DR. R. TILLEY: I have only one word to say relative to my suggestion of the possibility of cerebral abscess, and it is founded simply on this fact that there are only two cases in which this phenomenon has been observed, on record as far as I can find, and I have searched as well as the means at my disposal would allow me. I have sent to Washington for several volumes. In the two cases where an autopsy has been made both have been associated with lesions in the cerebral hemispheres, one of them a blood-clot and the other one an abscess in exactly the same location. With this peculiar lesion and these two previous cases with the lesion practically in the same location, we would be confined, as far as speculation is concerned, to some similar hypothesis. In choosing between a blood-clot or hemorrhage and a possible abscess, I accepted the possibility of an abscess simply on account of this fact: that the child so suddenly got better. I saw her, we will say it might be to-day, and had already prepared for an autopsy; the previous night, the Sister told me she had been burrowing her head in the pillow and complaining of

severe pain in the top when she was delirious, and still this vomiting continued, but suddenly, without any medicine, without additional care, she became better all at once. Food staid on her stomach, she slept well, got up and dressed and in a few days afterward went home on her holidays. I cannot say how long, but about fourteen days, I imagine, from the time she began to get better, abscesses began to appear all at once, and it is the presence of these abscesses that made me suppose that the lesion corresponded to the abscess that was observed at the autopsy table, and by some means these abscesses were the expression of the previous abscesses that had existed.

DR. MOYER: I would like to ask Dr. Tilley if the reflexes and coördination were observed?

DR. TILLEY: There did not seem to be any difficulty in coördination, or anything of that kind. There was quite a good deal of difficulty in examining the patient, just as there is when the patient is under the care of the Sisters, and I had to do the best I could, not as I would, so that the reflexes, etc., were not examined as accurately as I should have done under other circumstances.

The Committee appointed to investigate the

PRIORITY OF THE DISCOVERY OF CHLOROFORM

made the following report:

There are three claimants to the honor of the discovery; Liebig, of Germany, Soubeiran, of France, and Guthrie, of America.

Liebig's Claim.—Liebig claims to have published his discovery in November, 1831. (See *Liebig's Annalen*, vol. 162, page 161.)

Soubeiran's Claim.—Soubeiran claims to have published his paper on either bichloride in October, 1831, in the *Annales de Chimie et de Physique*.

Liebig shows (see *Liebig's Annalen*, vol. 162, page 161) that the October number of the *Annales de Chimie et de Physique* was delayed in its publication, and that it did not appear until January, 1832. It certainly is evident that it was not published in October, as it contains the meteorological report for the entire month of October.

Guthrie's Claim.—In the January number, 1832, of *Silliman's American Journal of Science and Art*, we find an article by Dr. Samuel Guthrie, dated September, 1831, in which he says, "A bottle and phial contain alcoholic solution of chloric ether. The contents of the phial are as strong as I could conveniently prepare them, but not equal to some which I made not long ago."

In the October number, 1831, of the same journal, (page 64, vol. xxi) we find an article by Dr. Guthrie, without date, upon a "New Mode of preparing a Spirituous Solution of Chloric Ether," in which he says, "During the last six months a great number of persons have drunk of the solution of chloric ether not only freely, but frequently to the point of intoxication."

We find a notice to contributors in Prof. Silliman's journal, in which he says, "Communications to be in hand six weeks, or when long, and especially with drawings, two months before the publication day."

Dr. Guthrie's paper on chloric ether must then have been in the hands of the printer in July or August, 1831. And if people had drunk of his chloric ether for six months it would place the date of his discovery in the early part of 1831.

We therefore conclude that Dr. Samuel Guthrie is justly entitled to the honor of first discovering chloroform, and that the publication of his discovery antedates that of either Liebig or Soubeiran.

Respectfully submitted,

F. E. WANHAM,
N. S. DAVIS, JR.,
E. WYLLYS ANDREWS.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

PREVENTIVE TREATMENT OF SYPHILIS.

Dr. E. B. Bronson has presented before the Academy of Medicine an able argument, based on theoretical grounds rather than on any practical results as yet achieved, on preventive treatment during the primary stage of syphilis. By preventive treatment, he wished it to be understood, was not necessarily meant abortive treatment, but the employment of such measures as tend in any degree to abridge or mitigate the subsequent course of the infection and its effects upon the constitution. The scheme essentially consists in the local use of antisypilitics by a method designed to bring the remedy in direct communication with the whole of the affected region in primary syphilis, including more particularly the initial and the diseased inguinal glands. As commonly practiced this regional treatment has been chiefly confined to the use of mercurial hypodermics beneath the initial lesion, unless this was first excised, and into the mass of indurated lymphatic glands. But the plan, Dr. Bronson said, might be easily extended. The field of operation might include all of that district whose lymphatic vessels tend in their course towards the ganglia which are the seat of the disease. When the initial lesion was situated upon the genitals the area most available would consist of the external genitals, the perineum and the upper, inner and anterior aspect of the thighs, together with the inguinal region and lower part of the abdomen. By multiple small injections and by inunctions the effort is made to introduce mercury little by little into the lymphatics, with the hope of its being conveyed to the diseased glands with the least amount of offense to the normal tissues, and yet in sufficient amount to destroy the infectious germs or to retard their multiplication.

When hypodermics are used it is claimed that it is not necessary that the agent should be injected in large quantity in any one spot, nor in a concentrated form; so that $\frac{1}{8}$ of a grain, or less, of the bichloride, introduced in separate injections of not over $\frac{1}{16}$ of a grain each, would afford a more reasonable hope of effectively reaching the seat of the disease than a much larger dose given by the mouth. Dr. Bronson

uses a solution of 1 part in 400 or 500 of mucilage and water, with a small quantity of common salt added. Of this several injections are made, of 4 or 5 minims each, distributed over different parts of the cutaneous area mentioned. The discomfort caused is insignificant, especially if care be taken to avoid any escape of the fluid into the corium, and into the skin of the abdomen and thighs the injections may be repeated daily, or every second or third day. Together with these, but more especially in situations where hypodermics are less admissible, as in the perineum and on the penis and scrotum, inunctions also may be employed; and for this purpose a mercurial soap is preferable to mercurial ointment. It might be said that regional treatment is also constitutional treatment; but he contends that it is something more than this, and that it is at all events much better than doing nothing at all, as is advised by most authorities.

It will be seen that this method of treatment is based on the supposition that syphilis is at first a local rather than a constitutional disease, and also that it is a parasitic disease, which, although the syphilitic germ has not as yet been positively determined, Dr. Bronson considers explains the phenomena presented by it in a more satisfactory way than any other, and constitutes the best working hypothesis for dealing with it. Dr. Bronson believes that when first implanted in the tissues the syphilitic virus is, mainly at least, confined to the spot where the future chancre is to develop; that here finding a favorable soil, it grows and slowly increases until its intrusive presence becomes a source of offense to the tissue harboring it, and that gradually inflammatory action results. From this source of generation the virus contaminates sooner or later the nearest lymphatic glands, which in turn become other sources of supply; until finally, from these multiple foci, the whole organism becomes infected. According to this view the main route to the general circulation is by way of the lymphatics and through the *receptaculum chyli*; though it is possible that an insignificant portion of the veins may pass into it immediately.

According to the opinion generally current among syphilographers, Dr. Bronson went on to say, directly upon its inoculation the syphilitic virus passes into the general circulation; and the incubation pertains, not to any *materies morbi* in the vicinity of the point of inoculation, but to something in the blood; while the initial lesion is the first tangible sign of the blood disease, reflected in some arbitrary and inexplicable manner to the spot where the virus effected its original entrance. Two facts are alleged concerning the primary stage of syphilis upon which the symptomatic character of the initial lesion is based: 1, that an individual who has been inoculated with syphilis has always acquired immunity from any subsequent inoculation of the syphilitic virus before the chancre develops; and 2, that extirpation of the chancre does not prevent the regular course of the disease. While it is true that, as a general rule, auto- and reinoculation in the primary stage fail to produce any perceptible effect, a sufficient number of cases have been reported to show that the rule is not invariable, and that, if immunity is the test of general saturation with

the syphilitic poison, we have to conclude that the chancre is not positive evidence of constitutional disease; and hence cannot be its symptom.

It can hardly be said, he continued, that the results of excision make conclusively either for or against the hypothesis of the local character of primary syphilis. As a manifestation of the primary stage the chancre is hardly of more importance than the accompanying adenopathy. That the indurated lymphatic glands in the vicinity of the initial lesion are contributory sources of infection there is little cause to doubt; and were the initial removed, they would doubtless still suffice to contaminate the system. While, then, it cannot be affirmed of any period in the course of the malady that the disease is strictly limited to the site of the initial lesion, the proposition that syphilis is at first essentially a local disease remains still uncontroverted. An infection whose limits are circumscribed and more or less definite is a very different thing from one that has already taken possession of the entire organism.

As to the value of medicinal antisyphilitic treatment during the primary stage, he said, there is a diversity of opinion. While it is pretty generally conceded that the employment of mercury in this stage tends to retard the appearance of constitutional symptoms, the apprehension has been expressed by some that, in repressing the outward manifestations of infection, we are risking a more serious implication of internal organs. There is an inconsistency, however, in the idea that for the month or so of primary syphilis the same remedy is to be shunned, because of dangerous after-effects, whose continued employment during the years of the constitutional disease is accepted without demur.

Even though mercury does act as an antiseptic in syphilis, Dr. Bronson thought it very questionable whether it can have any effect upon germs circulating in the blood, and that it is much more probable that the effect would be exerted where both the germs and the mercurial would be apt to accumulate, as at such places of elimination as the skin, or where deposited in the tissues. That mercury does exert a most decided influence upon the local manifestations of syphilis when topically applied there is undoubted evidence; then why should not this potent influence be brought to bear directly upon these local lesions which are also dangerous foci of infection in the primary period of the disease?

In the discussion of the paper Dr. E. L. Keyes said that he would have been glad if Dr. Bronson had presented some practical results of the method advocated by him. Personally he believed that the disease becomes general from the time that it is acquired, and that the virus therefore gets beyond the lymphatic chain before the appearance of the initial lesion, which occurs only after a period of inoculation. He related a case in which, notwithstanding the complete excision, within twelve or fifteen hours after suspicious connection, of a small livid papule on the dorsum of the penis, the most marked constitutional symptoms subsequently developed. In this instance there was no further trouble whatever about the local lesion, and not the slightest enlargement of

the inguinal glands. The objection to local treatment before the diagnosis of syphilis had been established with the only agent which was of any service during the subsequent course of the disease, consisted in the fact that it was likely to throw more or less discord into the life of the patient; while, if constitutional symptoms did occur, they were apt to run an irregular course. He then related the case of a medical student who, contrary to his advice, commenced a mercurial course in consequence of a slight abrasion of the prepuce. At the end of six months, no evidence of syphilis having in the meanwhile presented itself (if the enlargement of a single one of the post cervical glands were excepted), he gave up the treatment. Within two years, however, he became the subject of hemiplegia, and eventually died of syphilitic brain disease. As a rule, he believed it was much better to delay treatment until the diagnosis was confirmed by the appearance of secondary symptoms. Otherwise a patient might be treated for syphilis who did not have the disease at all; and he referred to an instance in which a gentleman who never had the disease took bichloride of mercury for twelve years in consequence of a mistake of this kind.

Dr. R. W. Taylor, while agreeing with Dr. Bronson that syphilis is at first a local affection, was convinced that neither cauterization nor excision would prevent constitutional infection, and stated that there was already evidence enough to show that the disease cannot be exterminated at the radicals. He thought, therefore, with Dr. Keyes, that it was most rational to begin the treatment with the secondary stage, since by so doing a more orderly sequence was secured, and the moral effect upon the patient was also much greater. In primary syphilis the circumstances were entirely different from what they were later on, as we had to deal with a nascent disease which exhibited marked activity, and hence the most powerful remedies were required to destroy the new growths so rapidly forming. He believed it was impossible, however, to safely employ mercury, the only agent at our command for this purpose, in sufficient quantity to have the desired effect. As far as we could judge, mercury acted by causing fatty degeneration of the syphilitic cells, and as these cells did not become matured until the appearance of constitutional symptoms, it seemed to him irrational, as a rule, to use this remedy until the secondary stage of the disease was reached; especially since it had been shown that syphilis does not run the tractable course in those who are treated early as in those from whom mercury is withheld until after the primary stage.

In concluding the discussion, Dr. Bronson said that in the paper he had acknowledged that his views were based largely on theoretical grounds, and he had merely endeavored to point out the indications which called for early treatment. If the disease was primarily constitutional, no such indications existed, while the fact that the disease was primarily local did not imply that excision of the initial lesion should abort it. In his argument he had expressly discarded excision as a means of abortion, because by the time the chancre appeared the disease had

advanced beyond the lymphatics. In order to abort it, it would be necessary that all the foci of infection should be eliminated, and this had been proved to be impossible. Believing, however, that the disease was still local, he thought it was philosophical to treat it regionally, and thus counteract the infection as far as possible in this early stage. The objections which had been urged to such a course seemed to him altogether trivial, and he felt confident that any patient would prefer to take the chances of this prompt treatment rather than do nothing until the fully developed symptoms of the secondary stage presented themselves. Although he had no results to offer, he could abundantly testify from his personal experience that the method was entirely feasible, and he certainly thought it was worth a fair and systematic trial.

P. B. P.

CHARITY HOSPITAL OF NEW ORLEANS.

Petition of Medical Students of Tulane University of Louisiana, with Reference to the Appointment of Resident Students—Reply of Joseph Jones, M.D., President of the Louisiana State Medical Society.

MEDICAL DEPARTMENT OF TULANE UNIVERSITY OF LOUISIANA,

NEW ORLEANS, February 13, 1888.

To Professor Joseph Jones, M.D., President of the Louisiana State Medical Society.

Sir:—It is with feelings of great pleasure and satisfaction that we, the undersigned, students of the Medical Department of Tulane University of Louisiana, acknowledge your efforts to have repealed the Legislative Act of 1886, whereby the selection of medical students for positions in the Charity Hospital was restricted to applicants then resident in the State of Louisiana.

Believing, as we do, that a better selection can be made by choosing the most worthy, regardless of section or State; and furthermore, believing it to be of the greatest importance to have the ablest and most proficient students as sub-medical attendants in immediate charge of the various wards of the institution, subservient to the orders of the attending physicians and surgeons, thereby securing the most careful and intelligent attention, medical and ministerial, to the thousands of suffering poor who seek the comfort and shelter of this noble institution to be cured of their diseases and healed of their wounds; and believing, furthermore, that the continued enforcement of said act will tend to impair the growth of the Medical Department of Tulane University, said Medical Department having been enabled to offer her most proficient students to the service of the Charity Hospital *regardless of section or State*, and at the same time offering, as an incentive to all students desirous of so doing, the opportunity to compete in examinations, necessary to appointment, to resident studentship.

Whereas, the continued prosperity of the above-mentioned University, and the interests of the Charity Hospital, are matters of great importance to us; therefore we respectfully ask that you, in your official position as President of the Louisiana State

Medical Society, give this matter the attention it deserves, and use your efforts to have it brought before the next Legislative Assembly, urging its repeal.

We, knowing your devotion to your chosen profession, to the State of Louisiana and to the city of New Orleans, to the Charity Hospital, to which you have given so many years of valuable service, conferring benefits to suffering thousands, whom you have treated within its walls, whose testimony can be had from many portions of the civilized world; a knowledge of the above facts makes us feel that we can ask this of you with the confident assurance that your best efforts will be expended in its accomplishment.

We know your kindly regard for ourselves, and your untiring efforts to place us in the possession of the most valuable practical and advanced ideas in medical science; and appreciating your disregard for self-interest and advancement, we hope to emulate those noble and elevated sentiments whereby we can rise superior to sectional thought, and render justice where merited. We hope that your efforts may be strengthened to the accomplishment of the purpose as herein set forth; and again asking that you give this matter your attention, and use your best efforts to have it brought to the attention of the Legislature of Louisiana, we hereunto subscribe our names.

(Signed) A. W. BOREN,
and by 160 other students of the Med. Dep't of the Tulane University of Louisiana.

156 WASHINGTON AVENUE, 4TH DISTRICT,
NEW ORLEANS, LA., February 15, 1888.

To A. W. Boren, and the medical students of the Med. Dep't of Tulane University of Louisiana.

Gentlemen:—I have the honor to acknowledge the receipt of your communication of February 13, 1888, and beg leave to submit the following: The act to which you refer, containing the proscriptive legislation regulating the mode of selecting the resident students of Charity Hospital of New Orleans, was passed by the General Assembly of the State of Louisiana at the regular session of 1886, Act No. 47, "Making appropriations to defray the ordinary expenses of the State Government." . . . "Approved July 3, 1886, by S. D. McEnery, Governor of the State of Louisiana." The following is the portion of Act 47 which relates to the subject referred to in your communication:

"Charity Hospital in New Orleans. To support of Charity Hospital in New Orleans for year ending June 30, 1887, forty thousand dollars. For year ending June 30, 1888, forty thousand dollars: *Provided*, that none but resident Louisianians be admitted as resident students. Act of the General Assembly of Louisiana, 1886, p. 72."

We will not discuss the question of the legality of an act of the General Assembly of Louisiana, which makes an appropriation for the support of the destitute sick, contingent upon the performance of an act by the Board of Administrators, of which His Excellency, Governor S. D. McEnery, is President, which related solely to the nativity of the students

to be appointed, and not to the mode of expenditure of the funds devoted to such charitable purposes as the purchase of food and medical supplies, and the payment of the salaries of the house surgeon, assistant house surgeon, treasurer, and other employes of the hospital. It is more important that we should inquire into the official interpretation of the special and proscriptive legislation of Act 47.

Through the courtesy of Edwin Marks, Esq., Secretary and Treasurer of the Charity Hospital, we have been able to make the following extract from the letter of Governor S. D. McEnery, of February 9, 1887, giving his official interpretation of that part of Act 47 which relates to the class of students to be selected as resident students:

EXECUTIVE DEPT STATE OF LOUISIANA,
BATON ROUGE, February 9, 1887.

Edwin Marks, Esq., Sec'y Charity Hospital, N. O.
Dear Sir:— . . . My interpretation, in the Act of the General Assembly referred to, of the words "resident Louisianians," is that they mean citizenship. Any citizen of the State is a Louisianian, and the words do not imply or mean that the person should be native born. I presume that your inquiry is made in order to ascertain whether the medical students at the Tulane University from other States can be admitted as resident students in the Hospital, from the fact of their residence in the State during the time they have been pursuing their studies. This residence is not sufficient. If the student is under age, he of course cannot select his residence; but if he is of age and came to the State with the intention of acquiring a residence in the State, and of remaining permanently here, then he is entitled to admission.

It is the intention the act of residence coupled with the intention of remaining permanently, which fixes the residence, and which will entitle the party to become a resident student of the hospital. (McRowan vs. McGwin, 15 and 637.)

Respectfully yours,
(Signed) S. D. McENERY, Governor.

Regarding the action of the General Assembly of Louisiana of 1886, in Act 47, relative to the appointment of resident students in the Charity Hospital as unjust and unwise, and as injurious to the best interests of the students and patients, I embraced the earliest opportunity to obtain the sense of the highest medical authority in the State, to the end that the obnoxious clause might be repealed, or rather that such legislation might never again be repeated.

To accomplish this end, I attended the meeting of the Louisiana State Medical Society held in the month of April, 1887, in Alexandria; as will be seen from the following extracts from the proceedings of that Society:

Resident Students of the Charity Hospital of New Orleans, La.

Dr. Joseph Jones offered the following:

WHEREAS, The Charity Hospital of New Orleans receives the distressed and destitute, sick and wounded, of all the States of the Union, and all the nations of the world. Be it

Resolved, By the members of the Louisiana State Medical Society, that the position of resident students in the great and noble institution should be open to the competition of all honorable, intelligent and accomplished medical students. Be it further

Resolved, That the General Assembly of the State of Louisiana be respectfully and earnestly requested by the Louisiana State Medical Society to rescind the law enacted by the General Assembly of 1885, excluding all medical students from competition for the position of resident students of the Charity Hospital except natives and residents of Louisiana.

Resolved, That the action of the General Assembly of Louisiana of 1885 was in violation of those true, generous and patriotic principles which have ever characterized the philanthropic citizens of Louisiana.

Resolved, That the President of the Louisiana State Medical Society be empowered to urge the abrogation of this law of 1885, establishing, for the first time in the history of Louisiana, the unwise and illiberal policy of excluding from the competitive examination of the medical service of the Charity Hospital the intelligent and enterprising medical students of other States.

Dr. Joseph Jones supported the preceding resolutions by the following argument:

(a) The object of this great and noble institution is the relief of suffering humanity, the healing of disease, the restoration of the sick to the performance of the active duties of life, and the advancement of the highest intellectual, moral, and physical welfare of the commonwealth.

(b) The generous citizens of Louisiana have not confined their benefits and ministrations to their own citizens. Upon a careful examination and classification of statistics of the Charity Hospital of New Orleans during the period of forty years (1836-1876), we find that 310,659 patients were admitted, and of this number 248,011 were foreigners, 54,403 natives of the United States outside of Louisiana, and only 11,761 were natives of Louisiana. It is evident from these statistics that the noblest and broadest charity has actuated the citizens, and especially the medical profession, of Louisiana, in the charitable ministrations to the destitute sick of all States and countries.

(c) By again throwing open the field for honorable competition of all accomplished medical students, regardless of their nativity, the State of Louisiana will secure the most effective service and achieve the greatest good to suffering humanity.

Duly seconded and carried.

In conclusion, allow me to direct the attention of the students of the Medical Department of the Tulane University of Louisiana, and of our sister States, who may in future desire to compete for the position of resident students in the Charity Hospital of New Orleans, to the following important facts:

1. That Act 47 is not a law of the State of Louisiana.

2. The operation of Act 47, as far as the appointment of resident students of the Charity Hospital is concerned, ceases absolutely on July 1st, 1888.

3. Unless the General Assembly of Louisiana, at its subsequent meeting, is induced to repeal this unwise and proscription legislation, the Board of Administrators of the Charity Hospital of New Orleans will, after the 30th of June, 1888, be untrammelled in their appointment of resident students. They may, or let us hope that they will, act regardless of State lines, basing the appointments upon merit and merit alone.

As your friend and professor, and as a representative of the medical profession, I shall cheerfully comply with your request, and exert any influence at my command to avert similar legislation in the future.

With thanks for the kind and courteous terms in which you have been pleased to couch your petition, and with kind regards, I remain as ever

Your friend, JOSEPH JONES, M.D.,
Pres't Louisiana State Medical Society.

MERCURY IN THE BONES.

Dear Sir:—In THE JOURNAL, Jan. 21, page 95, column "Book Reviews," and in commendation of "600 Medical Don'ts," the review says: "To the other 'don'ts' might be added: Don't imagine that mercury can get into your bones," etc.

What then shall we do with authority so high and so generally accepted as Bartholow? In his "Materia Medica," fifth edition, pp. 248, 249, Bartholow says: "Mercury is deposited in the textures, interferes with the normal nutritive processes, and is found in all the secretions and excretions. A marked degree of anæmia, loss of flesh, loss of hair, eczema, a foul breath, diarrhœa, the stools being very fetid, are the characteristic symptoms of the action of mercury on the solids and fluids of the body.

"As a result of the changes in the composition of the blood, and of the direct action of the metal on the renal epithelium, albuminuria is one of the symptoms present in cases of mercurialism. Without the use of special means to render it soluble, and despite the use of such means, sometimes mercury remains permanently in the organism. When extremely severe cases of salivation were not uncommon, permanent damage to the osseous structures often occurred, and globules of mercury could be shaken out of the dried bones of such subjects." The italics are all mine.

The reading of proverbs and terse dogmas is generally pleasing though misleading, and the time has been when the writers had everything their own way. The proverb writer of to-day is liable to be inquired of occasionally before his sayings are accepted as finalities.

Wishing the addendum to "Don't" above quoted to be correct, I beg leave to ask the writer for the proof.

Very truly,

INQUIRER.

["We have never seen any ulceration of the skin or disease of the bones, or paralysis, in consequence of the therapeutic use of mercury, even in cases in which its misuse was carried to the extreme."

Von Zeissl, "Pathology and Treatment of Syphilis," p. 376.

"The attempt which has been repeatedly made by different authors to attach tertiary lesions, and especially lesions of the bones, to the mercury which was administered during the earlier stages of the disease (syphilis), is now shown to be groundless, by abundant evidence. . . . Persons who labor with mercury, and who are constantly exposed to its fumes, are by no means subject to affections of the bones. Virchow, who has been quoted as supporting this error, strongly repudiates it in his recent work on syphilis." Bumstead and Taylor; "Venereal Diseases," 1883, p. 734.

The shaking of metallic mercury out of dry bones is about as good proof that it was deposited as mercury during life, as seeing a saddle under a bed is proof that the patient has eaten a horse. When one finds mercury in a dry bone he may allay his excitement by the reflection that the subject from which the bone was obtained was injected with a mercurial preparation after death. There is no earthly reason why mercury should be deposited in bone. So far as mercury causing bone lesions is concerned, do we know of any such thing as mercurial osteitis? We know that mercury is given for syphilitic affections of bone, and with good results. And we know that mercury, given to pyralism, is frequently valuable in non-syphilitic osteitis.

Are we to believe, then, that mercury can itself cause similar lesions? This is good *similia similibus*, but very poor pathology.

When chemists examine the dead bodies of persons supposed to have died from the effects of mercurial preparations, they do not investigate the bones, but the viscera. They have no reason to investigate the bones. In works on the chemistry of poisons the bones are not even mentioned. And in such cases of poisoning has anyone ever seen any bone lesion thought to have been caused by mercury? The deposition of mercury in the bones is a Thompsonian and old woman's myth. REVIEWER.]

MISCELLANEOUS.

HEALTH IN MICHIGAN FOR JANUARY, 1888.—For the month of January, 1888, compared with the preceding month the reports indicate that pneumonia increased, and that diarrhæa decreased in prevalence.

Compared with the preceding month the temperature in the month of January, 1888, was much lower, the absolute humidity, the relative humidity, and the night ozone were less, and the day ozone was more.

Compared with the average for the month of January in the nine years 1879-1887, diphtheria, intermittent fever, whooping-cough, consumption of lungs, pneumonia, bronchitis, typho-malarial fever, and influenza were less prevalent in January, 1888.

For the month of January, 1888, compared with the average of corresponding months in the nine years 1879-1887, the temperature was lower, the absolute humidity, the relative humidity, and the day and the night ozone were less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of January, 1888, at 57 places, scarlet fever at 54 places, typhoid fever at 39 places, measles at 20 places, and small-pox at 1 place.

Reports from all sources show diphtheria reported at 10 places more, scarlet fever at 14 places more, typhoid fever at 19 places more, and small-pox at 1 place more in January, 1888, than in the preceding month.

A part of the increased prevalence of communicable diseases is doubtless only apparent, because a knowledge of a large number of outbreaks not otherwise reported, was obtained from the annual reports of health officers during the month of January.

THE MEDICAL ASSOCIATION OF THE STATE OF MISSOURI will hold its next annual meeting in Kansas City, Mo., April 17, 18 and 19, 1888, at Music Hall. A large attendance is expected.

STATE MEDICAL SOCIETY OF ARKANSAS.—The Thirteenth Annual Session of this Society will be held at Fort Smith, April 25, 26 and 27, 1888, commencing on Wednesday, April 25, at 11 A.M. President, W. P. Flint, M.D., of Washington, Ark.; Secretary, L. P. Gibson, M.D., Little Rock; Chairman of the Committee of Arrangements, L. L. Saunders, M.D., Fort Smith, Ark.

PROFESSOR UNNA'S COURSE IN DERMATOLOGY.—On April 1 Professor P. G. Unna, of Hamburg, will begin a series of *half-yearly* courses in the histology, bacteriology, diagnosis, and treatment of diseases of the skin, for physicians wishing to study dermatology. He will build a laboratory for histological and bacteriological work, the material for which he will obtain from his clinic and polyclinic.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MARCH 3, 1888, TO MARCH 9, 1888.

First Lieut. W. W. Fisher, Asst. Surgeon, sick leave extended one month on surgeon's certificate of disability. S. O. 50, A. G. O., March 2, 1888.
First Lieut. Paul Shillock, Asst. Surgeon (recently appointed), ordered for duty at Ft. Assiniboine, Mont. S. O. 50, A. G. O., March 2, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MARCH 10, 1888.

Asst. Surgeon E. P. Stone, detached from the Coast Survey Str. "Bache," and to hospital, New York, for treatment.
Asst. Surgeon James F. Keeney, commissioned March 1, 1888.
Surgeon George R. Brush, ordered to the "Omaha" when "Pensacola" arrives at Aspinwall.
P. A. Surgeon Victor C. B. Means, to the "Omaha" when "Pensacola" arrives at Aspinwall.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING MARCH 16, 1888.

Surgeon W. H. H. Hutton, to proceed to Brunswick, Ga., on special duty, March 5, 1888. Detailed as President of Board to select site for Gulf Quarantine Station. March 10, 1888.
P. A. Surgeon H. R. Carter, detailed as recorder of Board to select site for Gulf Quarantine Station. March 10, 1888.
P. A. Surgeon Eugene Wasdin, granted leave of absence for thirty days. March 8, 1888.
Asst. Surgeon W. D. Bratton, ordered to examination for promotion. March 7, 1888.
Surgeon G. W. Stoner, detailed as chairman of Board for physical examination of officers and candidates, Revenue Marine Service. February 28, 1888.
P. A. Surgeon F. M. Urquhart, detailed as recorder of Board for physical examination of officers and candidates, Revenue Marine Service. February 28, 1888.
P. A. Surgeon P. C. Kalloch, relieved from duty at Pittsburgh, Pa.; ordered to Marine Hospital, San Francisco, Cal. March 2, 1888.
P. A. Surgeon P. M. Carrington, relieved from duty at Marine Hospital, San Francisco, Cal.; ordered to assume charge of Service at Pittsburgh, Pa. March 2, 1888.
Asst. Surgeon J. J. Kmyoun, granted leave of absence for twenty days. February 28, 1888.

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CHICAGO, MARCH 24, 1888.

No. 12.

LECTURE

ON

THE OPERATIVE TREATMENT OF RETROVERSION. ALEXANDER'S OPERATION.

A Clinical Lecture delivered at St. Luke's Hospital,

BY HENRY T. BYFORD, M.D.,
OF CHICAGO.

GENTLEMEN:—Until recently the treatment of retroversion of the uterus had been a standing reproach to gynecology. An inspection of older hospital reports will show plenty of cures of almost every other non-malignant ailment, but scarcely ever a cure of chronic retroversion. Retroversion pesaries of various kinds and modifications follow each other like the waves of an unquiet sea, and disappear without bringing any cure with them. Now, however, since operative gynecology has taken the subject in hand, incurable cases are fast becoming the exception.

Operative procedures are of two kinds: those for the purpose of restoring the uterus to a natural condition, and those for restoring the uterine supports to their natural functions. It is to the latter class of operations that I wish to call your attention, supposing that the uterus itself has already received appropriate treatment.

The uterine supports may be divided into three classes, the pelvic roof or sustaining, the pelvic floor or retaining, and the perineum or supplementary. The expansion and duplicature of the perineum over the pelvic organs form, with these organs and their surrounding connective tissue, the pelvic roof. When speaking of them as uterine supports, we divide them into five portions; the broad ligaments extending across the pelvis from side to side and including the uterus in their embrace; the sacro uterine ligaments, extending from the posterior surfaces of the broad ligaments and uterus near the junction of the body and cervix, around the rectum to the upper and middle sacral regions, and suspending the cervix a trifle back of the axis of the superior strait; the pubo-vesico-uterine ligament, extending from the pubes to and around the bladder and cervix, and holding the cervix away from the sacrum; and the round ligaments extending from the uterine horns or shoulders like long narrow curved arms, forward into the inguinal canals. The function of the last mentioned ligaments is to keep (or return) the fundus in

front of the axis of the superior strait, so that the abdominal pressure will bear upon the posterior surface of the uterus. All of these tissues suspend the uterus in the center of the pelvis with the fundus in front of the axis of the superior strait, and the external os somewhat behind it. When the body is in a state of rest these elastic supports easily sustain the weight of the uterus, and that of the superincumbent abdominal viscera, which are also suspended and bear but slightly upon it. During muscular action, however, the abdominal pressure bears upon the posterior surface of the uterus and forces the anterior wall of the whole uterus downward toward the pelvic outlet. The resistance of the sacro-uterine ligaments tends to hold the cervix up from the coccyx and favors a rotation of the external os backward toward the sacrum as the fundus is pressed down. Thus we see that even when the uterine ligaments are not strong enough to resist this abdominal pressure they normally direct the lower end of the uterus back upon the pelvic floor and the upper end forward upon the firm pubo-vesico-uterine septum.

The pelvic floor or retaining support is made up of the lower end of the sacrum, the coccyx, and the coccygeo-anal ligament in the median line; by the ischial bones and obturator internus muscles laterally; between these points by the sacro-sciatic ligaments, pyriformis, coccygeus, levator ani and levator vagina muscles, the levator and recto-vesical fasciæ, and lower down by the connective tissue padding of the ischio-rectal fossa, the gluteal muscles, etc. These structures form a firm floor capable of supporting the uterus when borne against it by any pressure to which it is liable.

The perineum, supplementary uterine support occupies the space between the pubic rami in front of the anus and extends in the median line back along the coccygeo-anal ligament to the coccyx. It is made up of the recto-vesical fascia and levator vaginæ, or vaginal sphincter, supported by it; the perineal septum or triangular ligament containing the constrictor urethrae; the perineal fascia containing the constrictor cunni or vulval sphincter and the transversus perinei, and by the sphincter ani with its facial coverings. The perineum forms a barrier across and just below the pelvic outlet or space between the levator ani behind and the pubes in front. It is firm enough to act as a support to the viscera which penetrate it and terminate in it, and at the same time is sufficiently elastic to allow the visceral contents and fruits of parturition to pass through it. It supports

the uterus indirectly by supporting the parts in front of and below it.

In every complete retroversion of a normal sized uterus the external os lies in front and the fundus behind the axis of the superior strait; in slighter forms the displacement is the same in kind but less in degree. Hence our operations must either assist in holding the cervix back of the axis of the superior strait, or the fundus in front of it.

For holding the fundus forward two operations have been performed, viz.: (1) stitching the fundus uteri or its appendages forward against or near the abdominal walls or bladder, and (2) shortening the round ligaments. The former, first done by Kœberlé, requires that the abdominal cavity be opened, and is seldom justifiable except as secondary to a laparotomy for another purpose. We can usually employ other equally efficient and less hazardous means. The operation for shortening the round ligaments was conceived, successfully performed and established as a therapeutic measure by W. Alexander, of Liverpool, in face of almost universal opposition. The most telling objections against the operation were that it was difficult to perform (an exceedingly puerile one), and that it was unscientific to operate upon the round ligaments because the sacro-uterine ligaments were the chief ones at fault. The latter objection is rendered untenable by the fact that when we draw the fundus forward we restore the normal direction of the uterine axis with reference to abdominal pressure although the whole uterus may be a trifle forward of its natural location, and by the fact that after the os is rotated backward the sacro-uterine ligaments tend to retract, and regain their supporting function. I would like to remind you here that the traction of the shortened round ligaments are not antagonized by abdominal pressure, but turn the fundus so that abdominal pressure assists them.

This patient has a flexible uterus and a relaxed state of the sacro uterine and broad ligaments, allowing the cervix to turn forward and upward against the vesico-vaginal septum and the fundus to become wedged in the cul-de-sac of Douglas. Failures in fitting pessaries by myself, and afterwards by another gynecologist, and a persistence of distress, inability to attend to her duties and hysterical symptoms, in spite of local and general treatment, have influenced me to perform Alexander's operation.

As you see, she is a young, well developed, somewhat muscular woman, without any superabundance of fat. The ligaments should be of good size and easily found. I begin my incision over the pubic spine and extend it for an inch and a half outward along the upper edge of Poupart's ligament. One cut brings us through the skin, another through a stratum of fat down to the deep layer of the superficial fascia. I have struck the external pudic artery on the inner side of the incision and the superficial epigastric on the other, both of which in this case are so large as to require fine catgut ligatures. Below this deep layer of the superficial fascia we seldom find blood-vessels of any size. Another cut brings us down upon the external ring which is easily felt by the finger end as a long narrow depression along

the upper edge of Poupart's ligament, and near the pubic spine. With a probe-pointed fascia scissors I now cut all the tissues to the entire extent of the incision, introduce these small tracheotomy retractors, and have a clear bloodless field for work. An incision is now made from the pubic spine along the upper edge of Poupart's ligament right over the inguinal ring and as far as the depression is felt to extend. A slight bulging of fatty tissue shows that the inguinal canal is open. I seek for the ligament at the junction of the pubic spine and Poupart's ligament, and by looking carefully can see a delicate white nerve filament running over some pinkish slightly striated tissue. I cut the nerve, which is the genital branch of the genitocrural, and take up the tissue under it with the forceps, being sure to keep near to the pubic spine and Poupart's ligament. The thin fascia connecting it with the inferior external pillar is punctured by my broad hook and as the tissues are held up the fascia snipped toward the inguinal canal. The ligament is now free from the ring and can be recognized with ease for it is a large muscular one. By means of the hook I pull gently upon the ligament, separate the surrounding connective tissue, which forms a very loose sheath containing here and there aponeurotic bands that require section with the scissors. The ligament is strong, however, grows larger as it passes up the canal, and the connective tissue looser and more easily separated. Pulled again, the ligament slips gradually out of the canal, drawing an inverted portion of the peritoneal covering with it. The ligament may now be said to run. I now drop it, introduce a small clean sponge into the incision, and cut for the other. On this side I make the incision a little shorter—meet with no arteries—and succeed as easily as before in making the ligament run. While Dr. Hoag replaces the uterus with a sound, I strip the inverted peritoneal sheath back and, the uterus being replaced, I pull on both ligaments until the sound in the uterus is felt to move. While Dr. Foulks holds the left one I will take three sutures with fine silk-worm-gut through each edge of the ring and the round ligament as thus pulled out, and approximate loosely both edges of the ring to the ligament. I now cut off the projecting loop of the ligament and fasten the free end to the connective tissue at its normal pubic attachment. A few drachms of 1 per cent. carbolyzed water, injected into the ring under the ligament cleanses the inguinal canal. A small perforated rubber drainage tube, which I also slip under the ligament well into the canal, will prevent an accumulation of the bloody serum which is apt to be poured out freely during the first few hours. Using silk-wormgut for the external stitches, I carry the one nearest the pubic end of the incision through the round ligament. Having treated the left side similarly we sprinkle a few grains of iodoform in each wound, tie the external stitches and lay one of these pieces of lint dipped in a 10 per cent. solution of carbolyzed glycerine over each wound. Before removing the uterine probe I slip an Albert Smith hard rubber pessary over it and into position. As the patient will now wear it with comfort I will leave it for six or eight months, or until a permanent

readjustment of the tissues will have taken place. The nurse will put a little absorbent cotton over and around the dressing and fix it all in place by a double T bandage. She will change the dressings as often as saturated by the discharges.

The after treatment is based upon ordinary surgical principles. In from twelve to eighteen hours I shall inject some more of the carbolyzed water into the drainage tubes until it comes out clear. In from twenty-four to thirty hours I shall remove the tubes, wash out the drainage holes, sprinkle iodoform over all the stitches and then cover them with pads of iodoform gauze. In this way all bloody serum is removed and primary union under a dry dressing secured. External sutures are removed in 3 days.

We have here another patient in whom the operation will undoubtedly present more difficulties. She had some pelvic inflammation after the birth of her child about two and a half years ago, and, although apparently cured, has some faintly palpable peritoneal and cellular indurations and contractions about the broad ligaments. A slightly bluish hue of the cervix is one of the indications of such trouble, and is a condition that should lead us, before performing Alexander's operation, to examine the patient under ether, and determine whether the adhesions and contractions might not be such as render a complete and unhampered replacement impossible. In this case the fundus can be laid flat over the bladder, but less easily than in the other case. However, as pessaries do not hold the uterus in good position, and as there are no direct adhesions to prevent the shortened round ligaments acting, we will perform Alexander's operation as the most likely treatment to relieve her in the end. I have operated in a few such cases and have found that a readjustment and relief has finally occurred. She is a little fleshier than the first patient, but is rather deficient in muscular development, hence, I expect to find a smaller ligament and a greater abundance of connective tissue, and to have some difficulty in making the ligament run.

My incision, as you see, is only about an inch long and, not reaching the arteries on either side, scarcely bleeds at all. We are now upon the deep layer of superficial fascia, and I will illustrate a mistake often made, that prevents the ligament being found. We are told that when the inguinal ring is opened we may know it by the springing up of the fat. I now make an incision over the ring about half an inch long, and the fat between the deep layer of the superficial fascia and the abdominal muscles, bulges up as if from the ring. You may hunt about in this supposed ring for hours, as others have done, and not find any ligament. We now cut through this deeper layer of fat by a free stroke, and come upon a coarse fibred fascia that shows no trace of an inguinal ring either to the sight or touch, for the firmness of the fascia prevents us from feeling any depression over the ring, and the relaxed empty condition of the bowels takes away that soft fullness that is sometimes observed. Feeling about again I at last find a depression, and did I not know my landmarks well, I would cut down into it, and perhaps search for an

hour—it is a depression filled with fat just below Poupart's ligament. We must, therefore, in this case disregard depressions and cut down upon unmistakable unvariable landmarks. I place my knife just external to the pubic spine and cut through the fascia along the upper edge of Poupart's ligament, for the ring must be here. I am through, but I see no round ligament, only fat and connective tissue. Picking away a little fat I cannot be certain what I see. If I now make the mistake of poking about in the inguinal canal, I will disorganize the tissues so that I may not be able to recognize anything.

Remembering that the ligament is attached to the anterior surface of the pubes near the spine, and also to the external ring, I carefully take up the tissues that lie against the upper edge of Poupart's ligament near the spine, perforate the thin fascia stretched between the tissue raised and the external pillar with my broad hook, and feel confident that I hold the round ligament. I dissect off the fascia underneath, pull off the connective tissue fibers at the sides and above, but still cannot recognize the ligament. The tissue remaining on my hook is somewhat ragged, seemingly too small, and, although I have separated this tissue quite deep into the ring, it will not pull out nor run. If I pull any harder it may break, in fact is already stretching. Now there are a few characteristics of the round ligament and its attachments that will enable me to determine whether to go ahead with this or to take up one of the other similar looking tissues. If this is an aponeurotic edge its separation from its surroundings must be followed by hemorrhage—but the separation of this is almost bloodless; the aponeuroses when put upon the stretch come to a sudden stop, and, if pulled harder, break—while this gives an elastic resistance when pulled, and stretches before breaking; when an aponeurotic edge is pulled toward the inguinal canal, and from the pubes it shows its attachment to be at one of the pillars or under them—while this, when thus pulled, shows its attachment to be out upon the pubic bone near the spine. I am therefore sure that I have the ligament, although it is so small and has so spread itself before reaching the pubic bone that but little of it is left. Introducing my finger deep into the canal I boldly separate the ligament as far as the internal ring, and have the satisfaction of seeing it pull out slightly, become a little larger and easily recognizable. But I cannot bring out the peritoneal sheath as in the other case, and must separate very slowly with my finger in the canal. It now runs, as you see, but not so well as the other, and is about one-half the diameter.

The mistake that has often been made in such cases as this is that the ligament has been gradually stretched out instead of drawn out. When there is difficulty it is better to enlarge the opening of the ring, and get into the canal where the ligament grows larger instead of smaller, as it would if merely stretched. You will notice that I have the same condition of affairs on the other side. The uterus being replaced, I finally succeed in moving the uterine probe by pulling on the ligaments. The

difficulties are over, and I proceed to attach the ligaments and complete the operation as before. We will leave the pessary for eight or ten months.

A little reaction may be expected from the disturbance and stretching of peritoneal indurations and contractions, and possibly a dose of morphia be required when she recovers from the anæsthetic. The pessary is left for the purpose of keeping the cervix back of the pelvic axis until the round ligaments are healed in their new relationship, and until the sacro-uterine ligaments will have time to contract as much as may be. If, after two or three months there should be any tendency to a sagging forward of the cervix toward the relaxed pelvic outlet, we will raise the posterior vaginal wall by denuding and drawing up the tissues along the posterior sulci, somewhat after Freund's perineorrhaphy or Martin's *elytrorrhaphia duplex lateralis*. Thus the fundus will not only be held forward but the cervix upward and backward, and the retroversion be permanently cured.

EPIDEMIC TYPHO-MALARIAL FEVER.

BY FREDERICK HORNER, M.D.,
OF MARSHALL, FAUQUIER CO., VA.

Among the medical notes of the writer's grandfather, the late R. H. Little, M.D., who practiced at Hay Market, Prince William county, Virginia, was found the following letter from his preceptor, Dr. Benj. Rush:

"Sept. 5, 1804.—I have only to advise, in your present contest with a powerful and insidious epidemic, to accommodate your remedies to the state of the system. Try all modes of treatment. There is certainly a right one, and I sincerely wish you may find it. Tell your farmers who complain of the plaster-of-paris as the cause of their sickness, that the potato was banished from France by an edict of the government because a sickly season followed in a few years its cultivation in that country. The people after a while discovered their mistake, and recalled the potato from its banishment. Our city is unusually healthy, the heavy rains, by washing our streets and common sewers, have been in the hands of heaven of making it so."

Dr. Little afterward removed to the valley of the Shenandoah, near Winchester, and his notes show that he encountered again in 1827 another epidemic then termed remittent bilious fever. Entire families, including white and colored persons, and of all ages, were prostrated by the disease, which extended all along the river as far as Harper's Ferry, and to the near villages and towns. Though Dr. Little served as a surgeon in the U. S. army, strange his notes fail to record the occurrence of a previous epidemic of fever of widespread prevalence in the New England and Middle States in 1814-15, subsequent to the war with Great Britain, which the physicians considered to be a new form of disease, and named "Typhus Pneumonia." Unluckily, they failed to recognize that it was a low asthenic form of disease, with no visible signs of inflammatory ac-

tion in the vital or visceral organs of the body, and in this aspect entirely differing from bilious remittent fever. The "lost art" introduced by Dr. Rush, of the *Lancet*, and claimed by him to have been so effective in the treatment of yellow fever in Philadelphia in 1799, proved to be a weapon of destruction when physicians were called to treat the fever in 1814-15, and doubtless many valuable lives were sacrificed because of the blind adherence to theory of the sangrados of that period. Dr. Gustavus B. Horner, a successful surgeon of the U. S. army, and physician of Warrenton, Virginia, was submitted to the depletory treatment, and after a third venesection, died in the vigor of manhood.

Incidental to the massing together of large bodies of soldiers during the civil war in this country, and from local and climatic causes, this fever, which was then first properly designated Typho-Malarial, again prevailed, and again occurred a repetition in 1886-87. The "Bulletin of Health" of Tennessee for the month of October, 1887, reported bilious fever to be epidemic in some localities. In Lebanon county there were 48 cases, 29 white and 19 colored. Out of this number were 6 deaths. The reports from seventeen counties of Tennessee show that typho-malarial was the most prominent prevailing disease, and that the year has been one of greater fever prevalence than common all over the country. Some of these cases of fever were of a very severe grade, and proved fatal. Some lacked the bowel complications and rose spots, and other distinctive features, yielding after three weeks to a treatment of iodine, carbolic acid and quinine. The newspapers also confirmed the statement of the general prevalence of the disease in Missouri, Ohio, Maryland and Virginia. It occurred, also, on board ship, as well as on land. The official report of Surgeon-General Grinnell, U. S. navy, for 1886, mentions that "the commanding officer of the U. S. S. Quinabang, who had made a rapid trip from the United States to Egypt in nineteen days, arrived; a fever of a violent type set in, ending in perforation of the bowels and death. The crew of another vessel of the squadron contracted this fever in the port of Alexandria, though local causes favoring its development were supposed to exist on board. At Constantinople, after the vessel had gone into dock, a case was developed that could be traced to a local cause sufficient to generate the poison of typhoid fever." This report is quoted to show that naval surgeons admit the existence of a *materies morbi* and the infectious-contagious character of the disease.

A brief record of cases which occurred at Marshall, Fauquier Co., Virginia, in 1886-87 may interest the reader. Marshall has a population of about 200 inhabitants, and is located near the Blue Ridge mountains, in the midst of a section of the state famed for salubrity. The houses have been long built, some a century ago, with no cellars, timbers partially rotten, and in contact with the ground. The drinking water is obtained from wells and pumps long sunk and rarely cleaned out, the water receiving the debris from the atmosphere, the soil, and occasionally putrid animal matter. When

drought prevails in midsummer, the water is low and has a somewhat unpleasant taste of salts of magnesia, lime and iron. During the winter and spring of 1886-87 the weather was very cold, with violent storms of wind, and the summers were extremely hot, with the thermometer in the 90's for days; night and day distinct hot waves were felt.

Case 1.—S. G., a farmer, *æt.* 65. In the month of March, after great exposure buying cattle in Chicago, returned home and became ill with symptoms of typhoid fever. The drinking water of his family was obtained from a pump located a few feet from a stable and a heap of manure. He never rallied, and died comatose during the third week.

Case 2.—M. T., female, *æt.* 40, lived at Marshall House. Dwelling house and water supply unsanitary. This patient also died.

Case 3.—Three females, two adults and a child, in one house, were taken simultaneously ill with fever—type, typho-malarial—cerebral and nervous symptoms very violent. Within a few yards of the dwelling was heaped up the earth from a well which had been dug and rock quarried with large quantities of powder and dynamite, and left exposed to the excessive heat and heavy rains which fell during the month of July. All recovered. One case of acute dysentery occurred in this family afterward. During the month of May, 1887, Dr. Copeland stated to the Fellows of the N. E. Medical Society that he had had in his practice lately several anomalous cases of fever, simulating, he considered, meningitis. Shortly afterwards Dr. Cochrane, of the Plains, near Marshall, had under treatment three cases of fever in a single family, one very ill. The cellar and kitchen of the house was very unclean, and fouled by the debris of decayed vegetables and chicken offal thrown out near the dwelling. All recovered, under the treatment by baths and the internal use of antipyrin. The disease again invaded Marshall and the vicinity, and there were cases of fever in nearly every house, while the newspapers reported its prevalence all over the state.

Case 4.—M. C., female, *æt.* 40, occupied one of the old houses, with the flooring and timbers near the earth. She was very ill for weeks: unable to retain any food, and was nourished by enemata. Recovered.

Case 5.—P. L., male, *æt.* 45, kept a livery stable, and had also a distillery. At first was not seriously ill, and worried a great deal. His dwelling house was quite near the stables. When recovering he was warned to avoid exertion and exposure to the sun. He rebelled, however, and when about attending to his affairs, relapsed, became comatose, and died in this condition.

Case 6.—H. M., female, unmarried, lived in an overcrowded house, with inmates who had no special employment, and were perhaps poorly fed. Her case presented all the worst symptoms of typho-malarial fever. She recovered after a long illness.

Case 7.—M. D., a colored woman, *æt.* 45, was ill with the fever for several weeks in the month of October. Had for several weeks symptoms of heart disease. She made a good recovery, and afterward

appeared in better health than for many years. In the month of October following, while undressing for bed, she dropped dead, from mitral disease and paralysis of the heart.

Case 8.—G. A., female, married, *æt.* 30, has three children and has had three miscarriages, and for several years symptoms of Albuminuria. When taken ill with fever there was great body heat, high fever, and wasting of flesh. After sponging with cold spring water, the skin would dry as if it were a heated metallic surface. The drinking water was obtained from a spring near the stable, and was considered unwholesome. At the end of five weeks she was delivered of a dead fetus at the period of five months' gestation. Afterward she made a good recovery.

Case 9.—B. C., a married lady, *æt.* 50, resident of Philadelphia, before coming to a country residence near Marshall to spend the summer. She had lately moved into a house, the entire repairs of which had given her great worry; had for several years complained of constant dull pain in the right side, after exposure to malaria while visiting Europe. In midsummer she returned to the city for a few days, but again came to the country here, becoming ill with symptoms of incipient typhoid fever. She went back to the city. The report received of this case was that at the end of six weeks the patient became suddenly ill—great prostration, pallor, cold extremities, and collapse, with swelling, and all the signs of an hepatic abscess. After consultation, her physicians, Profs. Bartholow and Parvin, at first were inclined to operate, but waited, and finally left the cure to nature. After three months' severe illness, the patient is making a good recovery.

Case 10.—M. W., the son of this lady, *æt.* 21, a druggist by profession, became ill with fever; acute pain, tenderness of the abdomen, temperature 104°, pulse 93°, and signs of collapse and peritonitis. He had been allowed to visit his mother's chamber, after the free use of disinfectants on his face and hands. It may be added that this patient's business was in a large manufactory of drugs and chemicals, and confined him during the entire day to a heated if not impure atmosphere. For some weeks he complained of loss of appetite. Resident in the house where his mother was ill for weeks with fever, it cannot be a matter of surprise that he contracted the disease, which developed the usual symptoms, with marked fetor. Both of these cases are now convalescent, and have been ordered to a health resort in the South.

That the brief narrative presented of these fever cases at and near Marshall suggests a clew to the etiology would appear to be self-evident. The dwellings were unsanitary, the drinking water impure, the isolation of patients was neglected, and the season was marked by excessive hot weather, with the epidemic tendency to typho-malarial disease. In Pepper's "System of Medicine," chapter "Typhoid Fever," by I. H. Hutchinson, M.D., the author mentions that a single case at Darwin, England, where the sewerage of a single house was defective, the excreta of a typhoid fever patient was carelessly

thrown into a well from which drinking water was obtained, and 1,500 cases occurred in that town. In another instance it is proved that the excreta of a patient living in a town near London gave origin to an epidemic fever affecting 62 families, who used the milk of diseased cows. Indeed, the medical profession at present are agreed in the opinion that the stools and clothing of fever patients, and the putrefactive debris of wells and cellars, and impure water or milk, so long as they retain the specific germs, bacilli typhosi will prove sources of infection—the incubative period being usually three weeks. And as a final cause, it may be added that the Bible informs us that the Almighty smites man with fever as a judgment for punishment of sin.

Treatment of Typho-Malarial Fever.—Only the Divine Savior, who healeth all our diseases, has by a touch and word cured any form of fever. The office of the physician would appear to be in his treatment of a case, to seek to avert harm to important vital and excretory organs and viscera, where lesions exist. At Marshall and in the vicinity the three methods of treatment now recommended by standard authors were tried, viz.: first, baths; second, antipyrin, and third, iodine. In the treatment of the fever at Marshall, each of these methods were given a fair trial, and with excellent results. The cold bath, begun with first in the morning, and afterwards repeated three or four times during the 24 hours, acted admirably in adynamic cases attended by high nervous excitement. Antipyrin, five grains every three hours, administered internally. After a bath there is marked reduction of temperature, and of the pulse rate, and when the full effects of antipyrin was obtained, profuse perspiration, followed by refreshing sleep and a desire for food, with no unpleasant effects, as sometimes follows the use of quinine.

Professor Robert Bartholow was the first to suggest the use of iodine, which, it is supposed, produces a condition of blood in which micro-organisms, including the bacilli typhosi, cannot live. The Statistics of Collective Investigation are as yet needed to prove this theory. The distinguished author recommends the following formula:

R	Tinct. Iodid.,	f. 5j.
	Acid Carbolic Liq.,	f. 5j. M.

Of this, one, two or even three drops is given in a sherry glass full of ice water, after food, and repeated every two or three hours during the day and night. In addition to this treatment, Hydrarg. Murias, gr. v, is prescribed, and repeated on alternate nights until three or four doses have been administered in the course of the first six or eight days. Unless there is a high temperature, 104° F., it is stated the fever calls for no special treatment beyond cold sponging. The single case treated after this method near Marshall recovered.

The diet of the fever patient should be strictly regulated, and such should have complete physical and mental rest, with the services of a trained nurse. He should use boiled water, cooled by ice, as the process of boiling tends to arrest fermentation,

though it may not suffice to prevent the development of bacilli.

Finally, it may be added that for many years prior to the discovery of remedies already enumerated, ol. ferebenth, sulphate of quina, and alcoholic stimulants were esteemed as valuable medicines for the treatment of typho-malarial fever. In the "Medical and Surgical History of the War of the Rebellion," vol. ii, it is stated by Cullen, Rush, Physic and Chapman that whenever the tongue became smooth, dry and red at the edges, and there was vomiting and diarrhoea, emulsio ol. terebenth. as a diffusible stimulant and local alterative acts well, and is an incomparable remedy in low fevers. Antiseptic virtues are attributed to this remedy by the authors cited, and by Bedford Brown, M.D., in a late article published in THE JOURNAL, July 2, 1887.

IMPLANTATION OF HUMAN TEETH; THE LIMITS OF ITS SUCCESS.

BY J. P. MILLER, M.D.,
OF BUCKHANNON, WEST VIRGINIA.

In reply to a considerable number of inquiries made in person shortly after the operation, and later by letters, but all too early to warrant me in the expression of an opinion as to the good result in my case of an implanted tooth, I take this opportunity of writing particulars rather fully, and I hope satisfactorily, for publication in THE JOURNAL, believing that this will be of interest to many more than those that have inquired.

While attending the late International Medical Congress at Washington Dr. Younger, of San Francisco, kindly and certainly skilfully did for me the operation of implantation, at the Franklin Building, in the presence of a number of dentists and the ubiquitous reporter. The latter had a position in the hard-pressing crowd before all others, and rested his manuscript upon an arm of the chair in which I was placed. The next day, September 10, the *Evening Star* devoted a column to "Dental Curiosities," from which I quote the following:

"To the person who believes that the sphere of the dentist embraces only, or principally the operation commonly known as pulling teeth, but called in dental vernacular 'extracting,' a visit to the clinical operations at the Franklin Building would have been a revelation. There, every morning throughout the week, prominent dentists have performed some of the most difficult and useful operations known to the profession. Patients were treated in a highly scientific manner—filling, building, scraping were done on all sides. This work has, perhaps, attracted more attention than that of any other Section of the Medical Congress.

"The human mouth, with its various uses and incidents, presents to a dentist a world of possibilities. Invention runs riot in cavities between roots, and through the gums. Dental science has been advanced wonderfully in the past few years by the energy of enthusiastic practitioners. Methods that

ten years ago were considered the acme of perfection are now abandoned as musty and worthless.

"But there is one operation which overshadows all others in its wonderful character and its important future. This is the 'implantation' process. The history of the operation is as follows: About one hundred years ago Dr. Hunter, of Edinburgh, Scotland, had a peculiar idea, and he followed it out by extracting a live tooth from a human jaw and implanting it in the comb of a rooster. The tooth grew, much to the delight of the Scot, and, probably, to the disgust of the cock. But Dr. Hunter's difficulty now lay in the fact that he did not know *why* it grew, and consequently was unable, in his future operations, to select those peculiar conditions which were necessary for successful work. Considerable experimentation has gone on since that time with varying success, but it is only within the past two years that practical results have been obtained. Dr. W. J. Younger, of San Francisco, is the pioneer of the practical work in implantation, and has been carrying it on for about two years. His first step was to discover that which Dr. Hunter did not know, the cause of the growth of the tooth. He has found, he says, that the human tooth is provided, like a grain of wheat, with a membranous outer lining, which serves to supply the material with nutriment through absorption. This is termed the peri-cementum. A tooth may be extracted, Dr. Younger has discovered, and laid away for years, but if the membrane is not disturbed or injured it may be used with success in implanting.

"YESTERDAY'S OPERATION.

"The operation which Dr. Younger yesterday performed on Dr. J. P. Miller, of Buckhannon, W. Va., was as follows: A search was made in the morning throughout the dental establishments of the city until a suitable tooth was found, intact in its coating, perfectly sound, and of the proper size. The vacant place in Dr. Miller's gum had yawned for nearly four years, and the missing tooth was described as the right superior lateral; that is, in plainer language, one of the 'eye teeth' of the upper jaw, just to the right of the central tooth. The tooth was first prepared by removing with dental burrs all of the pulp, and replacing it with 'hill-stopping,' a preparation of gutta-percha. Then, when the tooth was ready, the gum was cut open by two upward incisions, making a 'flap.' None of the flesh was removed. The dentist then bored up into the jaw-bone of his patient, forming a cavity there, working away until the hole was exactly the size and shape of the root of the tooth. This consumed about thirty minutes. The prepared tooth was then inserted and so fitted that there was perfect contact between the bone and the root, and the line of the edges of the teeth was exact. A thread was next tied around the tooth and fastened to its two neighbors, in order to keep it from disturbance. The flesh was pressed down into place and left to grow.

"Dr. Younger stated that he had performed this operation about 200 times, and in only twenty has

he failed. These failures he attributes to the absence of the 'peri-cementum.' In about two weeks the thread may be removed, and in another fortnight the tooth will be solid.

"Surgeons recognize this operation as one of the most difficult and practical known to the dental profession, and it is claimed that in certain lines it is destined to revolutionize the science."

Immediately after the completion of what is described above, an impression of the back of the teeth next adjoining to and including the implanted one was taken, and a plate of vulcanized rubber made so as to fit closely all these. Holes were drilled through this plate through which silk ligatures were passed, then between and over front of teeth to protect and stay, or "splint" the newly implanted tooth. This I was told to leave in place for two weeks, and keep the gums carefully aseptic by frequently washing with a bichloride solution, 1-1,000. This solution I found too strong. After weakening to about 1-5,000 I bore it well and it did well. The first few days I washed—or rinsed—the gums by taking a mouthful of the solution and running it over the parts, including the newly made flaps and the entire extent of plate-covered gum, using several mouthfuls at a sitting. This was done three and four times a day at first, then twice a day until I removed the plate, on October 3. All this time I avoided the mastication of solids, even beef and bread, in the "implanted" side of the mouth.

About two months after the implantation A. M. Jarrett, D.D.S., of Grafton, W. Va., a skillful dentist of twenty years' active and extensive experience, who was with me at the Franklin Building the morning of the operation, and himself implants teeth, examined my tooth carefully and pronounced it a *perfect* success, explaining that I was an exceptionally good subject, and that no better result could be had. Up to that time and still later I had never felt that the tooth would do to "take a bite" with, not even of an apple.

During the holiday season I accidentally placed under the tooth a piece of cold turkey which sprung it loose, and gave me a soreness and pain in the gum for several days and the tooth feeling about as it did when it had been implanted a week, but decidedly and easily movable. At the time of this writing it is less painful, possibly more solid, than before the holiday accident.

To the inquiry, then, whether I regard implantation as a success, I must qualify my answer by the extent of the meaning of the inquirer, viz.:

1. Does it restore the symmetry of the teeth, gums and mouth? Yes; my tooth had been extracted about four years and the gum was badly shrunken. This did not begin to fill up until about two months after the implantation, since which time it has filled out almost completely, and the tooth is same in size, color and general appearance as its fellow on opposite side of the mouth.

2. Can the tooth be used in mastication? Upon food of medium hardness and when insalivated and partially masticated, yes.

3. Is the tooth as good as the original one whose place it fills? No; and it will be remembered that I had it upon good dental authority that a better result than mine was at two months after the operation cannot be had.

Buckhamton, W. Va., March 17, 1888.

THE NECESSITY FOR INSPECTION OF ANIMALS REQUIRED FOR FOOD.

Read in the Section on State Medicine, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY CARL H. HORSCH, M.D.,
OF DOVER, N. H.

Among the number of persons who have made efforts to prevent the eating of diseased animal food, Moses was the first well known. The commands in the Talmud are:

"The animal shall be killed with a sharp knife and three cuts. If the knife has a jagged edge, or the animal breaks a leg when falling at the time of butchering, the meat is condemned.

"To eat no meat from a diseased animal;

"From an animal that has died suffering with tympanites;

"Animals which have jaw worm;

"Lameness from any cause;

"No meat from calves under eight days old;

"From sheep suffering with tetters;

"Diseases of the lungs, abnormal formations, more lobes on one side than the other (on the right 3, 5, 7, on the left 4, 6, 8,) adhesions, indurations, patches, water-blisters, matter in the vessels, if the lungs are flabby, dry, black, yellow, whitish, fleshy, or coagulations of dark, stringy blood are found in the vessels.

"No suppuration, or other diseases of the liver, spleen, or kidneys.

"No sharp things in the stomach, which perforated the lining of the walls, and have pus on them.

"Meat from healthy animals, and where the large vessels have been cut out is called *Kausher*."

Regarding eating pork and no fish without scales, this was most likely a dietetic regimen for the condition of the Israelites in tropical regions, and against prevailing diseases such as leprosy. It would be well if the rational parts of these commands were obeyed by all nations.

Dr. Most says: "Only healthy animals should be butchered and their meat used for food. The signs of health are: The animal moves around and appears lively; by applying gentle pressure on the back it does not bend the ears or tail; the eyes look clear and bright; the body is well formed and nourished; rumination of the cud is carried on well, no saliva flowing from the mouth; no blisters or pustules on the mucous membrane; breath is normal, no cough, groaning or gasping; the skin is not tightly grown to the body, is free from pustules, scurf, or scales; temperature normal; hair glossy. After skinning the animal we should find no boils, tumors, pustules nor black spots; the meat should be firm and has the characteristic fresh smell.

"Meat is not fit to eat from too old, too young, or from sick animals. Such meat is hard, tough, or soft, pale, watery or greasy, and the fat is soft, green or yellow. On opening the chest of healthy animals there is no putrid, bad-smelling exudations, no white patches or ulcers, no difference in color, and no disease in the surroundings of the lungs. In the stomach and bowels we find no red spots, soft, gray, black places, no dry, dark looking remains of food.

"The best meat comes from healthy animals of middle age. The appropriate age to fatten oxen is from 5 to 8 years old. Calves should be at least 3 or 4 weeks old, dropped the umbilical cord, and have lost the milk teeth. Veal and mutton should be kept from two to four days, beef and pork from four to eight, venison from four to ten, and fowls from two to four days. Fish should be cooked soon after they are killed.

"The meat of animals which have been driven fast before slaughtering is darker and heavier, contains more blood and decomposes sooner. The meat of animals killed by lightning is not fit for food. Some butchers inflate mutton to make it look plump, but such meat may contain the fetid breath of some person."

Dr. Most cites the following cases:

A man contracted a malignant fever and died, after salting meat from an ox which had been sick with murrain (Vieh-seuche). A family died after eating the meat of a hog which had been sick with angina (Braune). In Marburg, Stiermark, several persons died of hydrophobia, who had been eating meat from cattle which had been bitten by a mad dog.¹

In 1869 I was called to see a patient in Dover, N.H. The gentleman was 70 years old, a man of regular habits, and had been the most of his life healthy and strong, until March, 1869, when two of the lymphatic glands on the neck and several of the inguinal glands became enlarged. After examination and deduction of other diseases I diagnosed scrofulosis. The patient was a reliable, intelligent observer, and stated that he never before in his life had any signs of that disease and that there had been no case of scrofulosis on either his father's or mother's side. I afterwards ascertained that the butcher of whom my friend bought his meat had slaughtered and sold the meat of an ox which had a large swelling near one of his ears; the person who saw the animal called it "a wolf." This was a case in which I could find no other cause than diseased meat.

Two years ago a farmer brought a fat, good looking turkey to my house. While preparing it for cooking my wife found a very large liver, with white patches of the size of a cent throughout the tissue. On further examination I found fatty degeneration of the liver, and decided that the meat of that fowl would be better relished by the worms.

Glanders, hydrophobia, malignant pustules, splenic fever, tuberculosis, trichinae and other diseases are dangerous and communicable from animals to man.

¹ Ausführliche Encyclopädie der gesammten Staatsarzneikunde, von Georg. Friedrich Most. Doctor der Philosophie, Medizin, Chirurgie und Geburtshilfe, etc., etc.

The bare thought that we are liable to eat the meat of diseased animals causes the strongest aversion and there is certainly danger of contracting diseases thereby.

Dr. D. S. Salmon, Chief of the Bureau of Animal Industry, in answer to a letter from Mr. J. W. Bartlett, Dover, N. H., wrote:

WASHINGTON, D. C., Feb. 12, 1887.

In reply to your communication of the 9th inst., I would state that so far as I know there is no systematic and complete inspection of the cattle killed for beef in any State of the Union. Many states have beef inspectors, but as a rule they do not inspect all the beef, and in most cases do not see the animal before it is slaughtered, or the internal organs when they are removed. They simply look at the beef after the carcass is dressed. Such an inspection is not sufficient to discover all cases of disease for which carcasses should be condemned.

Very respectfully,

(Signed), D. E. SALMON, Chief of Bureau.

In an interview with Dr. S. H. Durgin, of the city Board of Health, Boston, Mass., Mr. Bartlett ascertained that the city has had an inspection of cattle and meat three years. "All the cattle are inspected two or three days before the slaughtering, and the Inspector sees the animals killed. If he suspects any disease he inspects the heart, lungs, liver, etc., but does not make a general practice thereof. In case the animal shows evident signs of disease before killing, it is slaughtered in the rendering-house away from all healthy animals. All disputed cases are referred to the city Board of Health, whose decision is final.

Dr. Durgin stated that a large amount of tuberculosis in cattle, especially in cows, has been found."

In order to provide a better safeguard against the use and sale of diseased meat, every animal should be inspected by competent persons before slaughtering, and the internal organs thoroughly examined afterward.

The members of the American Medical Association, Medical Societies, National Board of Health, American Public Health Association, State and local Boards of Health, every well meaning medical practitioner and citizen ought to see the importance of such a sanitary measure, and make an effort to impress it on the minds of their Representatives to Congress, State Legislatures, County, City and Town officers, that it is for their own safety and for that of over 51,000,000 of inhabitants, and thousands of persons travelling in this country, to pass laws and make appropriations for such protection, and to give the able members of 85,671 physicians, and of the veterinary surgeons a chance to carry out that very much needed part of State Medicine.

A CASE OF ECLAMPSIA, WITH ALBUMINURIA; TREATMENT.

BY J. H. BENNETT, M.D.,
OF WAUSEON, OHIO.

Mrs. H., æt. 35, multipara, was taken with convulsions at end of eighth month of pregnancy. At 4 o'clock in the morning of September 28 her husband was aroused from sleep by the convulsive action and labored breathing of his wife. I was called immedi-

ately and found patient in a comatose state; face and hands and, in fact, the whole body, oedematous to an uncommon extent. Being naturally plethoric, 16 ounces of blood were taken from the arm, followed by 10 grs. of calomel combined with $\frac{1}{4}$ gr. of elaterium. This procedure and treatment had a very happy effect in controlling the alarming symptoms. Elaterium was continued in $\frac{1}{2}$ -gr. doses administered every three hours, with 60 grs. of cream of tartar, until thorough watery stools were secured, which reduced the oedematous condition almost entirely.

Believing that urea decomposing in the blood causes the phenomena of eclampsia, benzoic acid was administered (after the thorough watery evacuations were brought about), in 8-gr. doses every three hours until the patient became conscious, after which the same treatment was continued, with the addition of wine of colchicum and guaiacum.

As soon as the patient was able to do so, the knee and chest position was adopted and maintained at times when her strength would allow of its use, thereby relieving in a mechanical way the pressure caused by the weight of the gravid uterus upon the renal circulation. The urine was frequently tested for albumin, and for the first few days the quantity was enormous, the test-tube showing that two-thirds to three-fourths of its contents was albuminous on reaching the boiling point.

The bowels were kept well open with occasional doses of cream of tartar and elaterium, with a view of reducing the work of the kidneys. Her diet during this time was a generous and nourishing one. Labor commenced in about thirty days from the time she was taken with convulsions, which terminated very pleasantly in every particular to both mother and child in about two hours from its beginning.

Considering the case from first to last, and especially the unfavorable circumstance of not being able to see my patient until taken with convulsions, and the happy results of treatment adopted, and finally the short and easy labor, leaving mother and child in excellent condition, impressed me as being worthy of more than ordinary consideration. The only addition to the treatment mentioned was an occasional dose of bromide of potash and hydrate of chloral to secure rest at night.

After an experience of nearly forty years in the practice of medicine, and in the successful treatment of puerperal convulsions when this method was followed; varying, of course, according to condition of patient and indications observed, leads me to firmly believe in its efficacy and importance.

There are five important indications to meet, as a general rule: *First*, to relieve the congested brain and venous system by bloodletting; *second*, to relieve the cedematous condition usually present, by administering drastic cathartics; *third*, to neutralize the carbonate of ammonia present in the blood by use of benzoic acid; *fourth*, to eliminate from the system urea, by the use of colchicum and guaiacum, thereby preventing its decomposition; *fifth*, knee and chest position, where it can be done, to relieve in a mechanical way the renal circulation.

Wauseon, Ohio.

MEDICAL PROGRESS.

BOURGET ON THE PTOMAINES.—DR. LOUIS BOURGET, in his thesis on the ptomaines (abridged in *Le Progrès*, No. 21, November 20, 1887), writes as follows:

The ptomaines, which form in great abundance during the decomposition of animal matter, belong, according to Gautier, to the series of the pyrides and hydropyrides. They represent oily, very viscid, colorless, highly alkaline liquids, and form, when saturated in equal proportion with strong acids, crystallizable, easily disintegrating salts. They possess a very penetrating odor, and readily oxidize in the air.

Putrescine, $C_4H_{11}N$,¹ is obtained from the putrefying flesh of the mackerel and the horse. It is an oily base, of amber color, and smells like hawthorne; it is but little soluble in water, but very much so in alcohol, ether and chloroform. Its boiling point is at $188^{\circ} C.$ ($370.2^{\circ} F.$).

Hydrocollidine, $C_8H_{13}N$, an oily liquid, produced by the putrefaction of meat.

Collidine, $C_8H_{11}N$, is one of the most abundant bases, has a strong smell of syringa, and is extracted by chloroform. According to Nencki, this base is identical with the collidine, first discovered by him. Guareschi and Mosso, following the method of Gautier, repeatedly found a base of the formula $C_{10}H_{15}N$. Brieger asserts that ptomaines only form during the first stage of putrefaction, and that afterwards they perish. But the fact that it has been possible to extract them from a body eighteen years after death seems to invalidate this opinion. Brieger has investigated and isolated the following ptomaines.

Peptoxine is obtained from fibrine peptonized by the gastric juice, without decomposition having taken place. It is a very permanent substance, and gives with strong reagents the same reactions as the vegetable alkaloids. It dissolves in amyl alcohol, and very readily in water, but is insoluble in ether, benzene and chloroform. Millon's reagent (nitrate of mercury) forms with this base a white precipitate which, by boiling, turns into deep red. This base is extremely poisonous.

Neuridine, $C_2H_{13}N_2$, is a diamine forming long needles like urea. Chlorohydrate of neuridine is very soluble in water, but, when pure, insoluble in absolute alcohol, ether and chloroform. It is the most frequent base in animal tissues. It is found in rotten cheese and in decomposing gelatine, which is very rich in this base. Neuridine occurs also in the fresh human brain. It is most abundant on the fifth and sixth days, and disappears after the eighth day. It forms precipitates with several strong reagents. Its picrate is almost insoluble.

Neuridine is perfectly innocuous, and is only poisonous as long as it is alloyed with impurities of putrid origin.

Neurine, $C_2H_{11}NO$. The putrefactive neurine is extracted from the lees after the elimination of the

neuridine. It is excessively poisonous, and resembles muscarine in its effects. It appears in the form of very deliquescent needles, and is an oxyhydrate of trimethyl-vinyl-ammonia, a very soluble base. It is obtained by boiling cerebral matter (lecithine, protagon) with baryta-water, and derives itself from choline (bilineurine or sincoline), $C_8H_{15}NO_2$, by losing one molecule of water. The *choline* is found in the brain and in the yolk of eggs, in combination with phosphoro-glyceric acid and can also be obtained from trimethyl-amine and from oxy-ethyl in aqueous solution. It is an oxyhydrate of trimethyl-oxyethyl-ammonia. By treating this choline with hydro-iodic acid and oxide of silver, one molecule of water is abstracted, and a neurine is produced which possesses the same properties as the neurine extracted from putrefying meat.

Animal ethylene diamine, which is extracted from decomposing codfish, is highly poisonous. There is, besides these, in the lees a substance of the same physiological properties as muscarine, and another which Brieger calls *gadamine*, but which does not seem to be toxic.

The *cadaverine*, $C_8H_{15}N_3$, appears already on the third day, rapidly increases, and abounds proportionally to the duration of the putrefaction. It gives the following reactions: with iodized iodide of potassium and with bi-iodide of bismuth and potassium, a brown precipitate; with picric acid yellow needles; with ferrocyanide of potassium and perchloride of iron a blue color. It is a thick transparent fluid, which greedily absorbs the carbonic acid of the air, forming in conjunction with it crystals. It likewise forms with strong acids beautiful crystals, which are soluble in water and absolute alcohol. Its chlorohydrate is very hygroscopic.

Putrescine, $C_4H_{11}N_2$ (bimethyl of ethylene diamine), is not found in perceptible quantity before the eleventh day of putrefaction. It is a clear liquid of sperma-like odor, boils at a temperature of $135^{\circ} C.$ ($255^{\circ} F.$), and distills without disintegration in presence of caustic potash. It forms with acids beautiful crystalline salts, which are not affected by exposure to the air. It is very soluble in water.

Saprine, $C_8H_{16}N_2$, is a centesimal compound analogous to the former, from which it only differs by some chemical and physiological properties of its salts.

The last three compounds do not possess any appreciable toxic action.

The *mydaline* forms as early as on the seventh day of putrefaction, but no sufficient quantities for examination of its properties can be extracted before the fourth week. The definite formula of this base has not yet been discovered, owing to the difficulty of obtaining it in pure condition. The investigation of its salts, nevertheless, shows that it is a diamine ptomaine, much resembling the preceding. Like these, it possesses a great reducing power, and gives with salts of iron and ferrocyanide of potassium an immediate and very copious precipitate of Berlin-blue color.

It produces increase of temperature and of the secretions, especially of the intestinal discharges. It dilates the pupils, respiration and circulation be-

¹ Brieger refuses to admit the correctness of Gautier's formulae for paroline and hydrocollidine. He even maintains that their existence is only due to the analytical method of the chemist.

come accelerated, after which, provided that the dose was not too large, the functions gradually and slowly become normal again; in the contrary case paresis of the anterior and posterior extremities (in animals) takes place. Death is ushered in by a rapid fall of the temperature, and the heart stops during diastole. An injection of 0.005 of a gram ($\frac{1}{2}$ of a grain) proves fatal to cats.

Poehl found in damaged flour, containing ergot of rye, a toxic base, to which he ascribes the convulsive and gangrenous symptoms which characterize poisoning by this fungus.

The germs of putrefaction produce, according to the medium in which they develop, different ptomaines. The bacilli which permeate horse-meat produce neurine; those in the flesh of fish, animal muscarine or ethylene diamine.

Nencki has demonstrated that the presence of free oxygen considerably assists the process of putrefaction.

The various stages of cadaveric putrefaction are marked by the formation of different basic compounds. Thus, *e.g.*, the choline disappears, to be replaced by trimethyl-amine. In one of Brieger's experiments it required seven days of putrefaction before the disappearance of the choline was completed, whilst the neuridine could be discovered until the fourteenth day, after which no trace of it was left. The formation of an extremely poisonous base is coincident with the disappearance of choline, which seems to confirm the theory that neurine is a derivative of choline.—*London Medical Recorder*, January 20, 1888.

PROGNOSIS AND TREATMENT OF CANCER OF THE LARYNX.—DR. DAVID NEWMAN, of Glasgow, at the close of an article in which seven cases are reported, says:

Malignant disease of the larynx, if unchecked by operation, is always rapidly fatal, but the course it follows depends chiefly upon two circumstances: 1, the site of the primary growth; and 2, its histological structure. The most rapidly fatal cases are those of extrinsic soft carcinomata, the most favorable are intrinsic sarcomata, while intrinsic hard carcinomata may be said to occupy an intermediate position. The individual characters of the neoplasm must also be considered.

In extrinsic cancer the disease is incurable, the growth spreads rapidly, the lymphatic glands become involved at an early date, and the patient is liable to die either from suffocation, from asthenia, from hæmorrhage, from sudden collapse, or from pyæmia; or the fatal termination may be induced by perforation of the œsophagus, by the formation of abscesses, or by pulmonary disease. If tracheotomy has been performed at the proper time, life may be prolonged, and suffering for the time be mitigated, but more heroic surgical interference in cases of extrinsic carcinomata offers little or no hope of success. Although the prognosis is very unfavorable in all cases of cancer, it is much less so in intrinsic than in extrinsic growths. When the tumor is small in size, and none of the tissues external to the larynx have become in-

volved, the hope of rescuing the patient from impending death is considerable. If, however, the disease has spread beyond the limits of the laryngeal cavity, or if the glands have become affected, then a tumor which at first may have been intrinsic becomes quite as hopeless, as far as operative interference is concerned, as if the growth had been extrinsic from the beginning. Total or partial laryngectomy is only to be thought of where the disease is intrinsic, and if the operation is to be performed, it should be done as soon as the diagnosis of cancer has been established. I am firmly of opinion that cancer is primarily a local disease, and so long as the system of lymphatics has not been involved in the new formation, I think it is quite possible that the patient may be rescued from death by the early performance of a radical operation.

When surgeons make up their minds to operate upon cancer of the larynx at the earliest possible stage of the disease, the statistics of laryngectomies will be greatly improved, and there will be some hope of curing the patient. But so long as members of the profession encourage the belief that cancer is a constitutional disease, their patients will seek to hide the fact of the existence of a tumor, in the fear that it may be pronounced to be "cancer." On the other hand, the fault is not always with the patient; it is not uncommon for the family medical attendant to postpone a consultation till he has satisfied himself of the nature of the disease; when this has been done the growth is often so far advanced as practically to place the patient beyond cure. I have frequently had painful experience of the evil effects of delay both in hospital and private practice, and I here desire to insist upon the importance of medical men prevailing upon patients who may suffer from intrinsic carcinoma to submit to operation as early as possible. My experience in the treatment of cancer has been almost limited to the larynx, mouth, and nose, where you see the disease at an early stage, and the diagnosis is comparatively easy. In the larynx the growth usually exists within the cavity for a considerable time before secondary manifestations show themselves. But while this is so it is no reason for delay—quite the contrary. If laryngectomies are justifiable, it is only on the belief that cancer is primarily a local disease, which may be eradicated if the operation be performed at a sufficiently early date.

Laryngectomy as an operation for cancer is still on its trial, and the question now *sub judice* is—should partial or total laryngectomy be undertaken as soon as the diagnosis has been established, or should simple tracheotomy be performed at a time when the growth has so increased as to cause dangerous dyspnoea? In order that a correct opinion may be formed it is the duty of all surgeons to fully record their experience. I have, therefore, brought these cases under your notice, and I hope at a future date to publish a few others which have occurred in private practice.

It is, I think, admitted by all that the only cases suitable for extirpation are those in which the disease is intrinsic; in other cases life may be considerably

prolonged by tracheotomy, which should be performed as low down as possible, in order that the tube may not be obstructed or displaced by the increase of the growth.

Without referring to statistics of laryngectomies in detail, I feel justified in saying that, until within the last few years, sufficient care has not been given to the selection of suitable cases for operation. The results of most recent experience tend to show that a careful selection of subjects for the operation greatly reduces the immediate mortality, and delays the extension of the disease; but while this is so, if time is lost by want of decision, recurrence must be looked for sooner or later.

Partial laryngectomy is indicated, and in late years has been performed frequently for unilateral intralaryngeal cancer. It is a less serious operation than total excision; recurrence is not more rapid or more frequent. Again, another advantage which is claimed for unilateral laryngectomy is, that the voice is almost perfectly retained without the use of a tracheal canula, and deglutition also may be completely preserved.—*Glasgow Medical Journal*, February, 1888.

IMPAIRED VISION AS AN EXCITING CAUSE OF MIGRAINE.—MR. PERCY JAKINS says:

For some time past my attention has been directed to the treatment of migraine by correcting any defect of vision which may exist by suitable lenses. Most writers on the subject advise medicinal and dieting treatment. Dr. Liveing, in his work on "Megrim and Allied Disorders," has advanced the hypothesis that "the paroxysms of migraine are due to nerve storms traversing more or less of the sensory tract from the optic thalami to the ganglia of the vagus, or else radiating in the same tract from a focus in the neighborhood of the quadrigeminal bodies."

The first case that came under my observation was in a married lady, æt. 34, who had suffered from periodical attacks of migraine every ten days for the last four years. She had taken all kinds of medicine, which gave but temporary relief. On testing her vision I found there was + 1.50 D. of hypermetropia. The patient was persuaded to wear corresponding glasses, much against her will, for a month. At the end of the time, when I again saw her, she said there had been no return of the migraine, and she "felt a different woman." I saw this patient a third time at the end of eighteen months and found that she continued free from her complaint.

The second case was that of a woman of 37 years who had suffered from attacks of migraine for the last three years, coming on every sixteen days. On examining her eyes I found hypermetropia which I was able to correct by + 1.25 D. glasses. The attacks of migraine in this case have entirely ceased.

The third case, a woman of 45 years, had been subject to attacks of migraine every fourteen days for seven or eight years, and had tried all kinds of treatment without benefit. I discovered that she was suffering from hypermetropia to the extent of + 1 D. The patient wore the proper lenses and has never been troubled with her attacks of migraine since.

The fourth case occurred in one of the nurses, æt.

36, at the Central London Throat and Ear Hospital. This woman was a martyr to migraine, having two attacks a week, which made her life a perfect misery. On examination I found hypermetropia to the extent of + 1.50 D. For the last six months, during which time she has been wearing the lenses, she has not had a single attack of her complaint.

The fifth case, a man of 42 years, has been a sufferer from migraine for the last six years. Hypermetropia was discovered which was corrected by + 2 D. Since he has been wearing these lenses the attacks have entirely ceased.

The sixth case occurred in a child of 10 years, who had complained of symptoms of migraine for the last three years. On testing his vision I discovered myopia, which was corrected by — 2.25 D. There has been no return of the attacks since he began to wear the proper glasses.

From the above cases one feels justified in concluding that in all cases of migraine the sight should be carefully tested and suitable lenses ordered. These cases have an additional value in the fact that no medicine was prescribed, and no alteration in diet ordered.—*The Practitioner*, March, 1888.

PYE-SMITH ON PROGNOSIS.¹—DR. PYE-SMITH sums up the conclusions arrived at in his paper in the following prognostic aphorisms: Epidemic diseases are most fatal when first introduced. Acute diseases, following upon chronic, are the most dangerous. A degree of pyæmia, which is of slight importance in a child, is grave in an adult, and imminently perilous in an old man.

Typhus fever is most dangerous to persons who have passed their 60th or 50th year; less so to infants and those between 30 and 55; and least dangerous to children about 5 and to young adults.

Small-pox in these particulars closely resembles typhus. Whooping cough is dangerous during infancy, and benign after 5 years of age. Scarlet fever seldom takes on a malignant form when it attacks adults. Acute lobar pneumonia has usually a favorable issue in youth, and is usually fatal in advanced years. In young adults pneumonia is rarely fatal unless the patient has disease of the kidneys or of the heart, or is of intemperate habits. Pneumonia is also a dangerous complication of fevers or acute rheumatism. Acute lobar pneumonia, when not fatal, leaves the lung uninjured after recovery, and the patient in good health. It is seldom or never followed by phthisis even when it attacks the apex. Primary acute pleurisy is not fatal, unless it is accompanied by pericarditis. Pleurisy, if under treatment it ends in death, is secondary to tubercle or to cancer, or to disease of the kidneys. Œdema of the larynx is very seldom dangerous; Œdema of the lungs is usually so. Acute bronchitis is a frequent cause of death in young children and old people. Fatal bronchitis, in persons between 10 and 60 years of age is either capillary or secondary to tubercle. Phthisis is most pernicious when it is hereditary. Consumptive patients,

¹ Observations on Prognosis. By P. H. Pye-Smith, M.D., *Guy's Hospital Reports*, vol. xlv., p. 50.

who lose flesh and color and appetite, with but little signs of disease in the lungs, are in a worse case than those who have marked local symptoms, but whose appetite and nutrition are good. Hemoptoe sis, even when copious, is not always of ill omen.

It is rare for hemorrhage from either the lungs or the stomach to be immediately fatal, except it proceed from aneurism. Chronic valvular disease of the heart, when it complicates phthisis, does not aggravate the latter—rather it checks its progress. Sudden death is more frequent from aortic than from mitral lesions; in regurgitant than in obstructive disease of the aortic valves, and in stenosis than in dilatation of the mitral orifice. Apoplexy, when in-greavescent, is commonly fatal. In apoplectic attacks, the ultimate prognosis depends chiefly upon the degree and continuance of unconsciousness; the immediate prognosis upon the degree in which respiration is afflicted. Chronic diseases of the spinal cord are more likely to end favorably in women than in men. Chorea is only fatal when the patient cannot sleep. Malignant tumors are more rapidly fatal in the young than in the old. Cancers in the aged are exceedingly slow in their process, and may even in rare cases atrophy. Stone in the kidney may frequently be cured without operation. The opposite is true of stone in the bladder. Diabetes is rapidly fatal when it occurs in young men, more curable in middle life, and of little danger in later years. Diarrhoea is dangerous only in infants and in persons above 60 years of age.—*London Medical Recorder*, Feb. 20, 1888.

ERGOT AND ACETIC ACID IN POST-PARTUM HÆMORRHAGE.—MR. JOHN A. FRANCIS says: It must have occurred to everyone with a few years' experience in practical midwifery to have encountered cases of *inertia uteri* after delivery. The labor may have been normally rapid and strong, and the placenta and membranes discharged entire after the usual interval, leaving a firmly contracted uterus; but presently, notwithstanding the continued pressure of the hand, the uterus elongates and acquires a feather-bed feel, and, refusing again to contract, hæmorrhage results; or the uterus may have been inert from the first, barely effecting delivery, or requiring instrumental interference; and all this notwithstanding the previous administration of large doses of ergot. In cases where the uterus does contract firmly at first, I take it to be but a continuation of the routine of labor and the uterus finding no opposition and nothing to expel, relaxes instead of passing into a state of tonic contraction. I should like to insist on the value of a pasty, or of a hectic complexion as a warning, and that an accelerated pulse, be it strong or weak, is an almost certain forerunner of hæmorrhage.

The liquid extract of ergot is very unreliable in these cases, and I have been grievously disappointed with preparations of ergot and ammonia in several instances. I have been equally pleased at the quick action of vinegar, given after ergot has failed, especially when followed by brandy or ether. Having experimentally given a wineglassful of vinegar several times, without ergot, I have found little benefit result.

Arguing by analogy, I made the following mixture: R Liq. ergotæ, acid. acetic, concent. aa ʒi; æther. sulph. (s. g. .735) ʒiv. This should be put into a three-ounce bottle, well corked, and shaken thoroughly. I administer of this mixture three tea-spoonfuls in a wineglassful of water, and having used it now for a considerable time I am delighted with its efficacy in causing contraction and giving a refreshing sleep after a short interval, with little or no complaint of after-pains. I combine this with the good old-fashioned pincushion pad wrapped round with a napkin. I look upon the ordinary binder, with or without the two or three napkins usually offered by the nurse when a pad is asked for, as a delusion and a snare. With the lower edge well below the hips (where it ought to be to prevent slipping up), the direct pressure on the uterus is almost *nil*, and it serves merely to hinder the pressure of the hand in manipulating the uterus.—*British Medical Journal*.

ACTION OF STROPHANTHUS.—DR. A. KAZEM BEK, of Kasan, reports seven severe cases in which he used tincture of strophanthus—the tincture being made of 1 part of strophanthus seed to ten parts of alcohol—in doses of gr. 5 every three hours, four times in the first day, and gr. 10 three times a day after that. The cases treated were chronic myocarditis, with consecutive dilatation of the heart, and with chalky deposits in the aortic valves and walls; two cases of mitral stenosis, regurgitation, alone or complicated with parenchymatous nephritis; two cases of bronchial asthma with emphysema; aortic stenosis with regurgitation; and cardiac neurosis in a woman with hystero-epilepsy. Partial failure was met with in one case only, that of a woman, æt. 37, who had rheumatic mitral disease and chronic nephritis; and in this case it was far better than succinate of caffeine and sodium, digitalis with valerian, grindelia robusta, or convallaria, with which the case had been previously treated. In the other six cases the drug caused marked improvement, usually in a short time. The dyspnoea was arrested, the paroxysms of bronchial or cardiac asthma, and the oedema gradually disappeared, cardiac action became slower and more regular, the pulse stronger and fuller, and the daily amount of urine was markedly increased. The patients slept well when they were taking the drug, and this Kazem-Bek thinks was due partly to an improvement of the general condition, and partly also to a direct cerebral sedative action of strophanthus, since he observed that dogs became drowsy after intravenous injections of the drug (tincture). From experiments made on frogs, turtles and dogs, with a view of determining whether strophanthus acts solely on the muscular tissue or not, Kazem-Bek concludes that it acts both on the heart-muscle itself and on the cardiac ganglia and the peripheral ends of the vagi; a conclusion that is supported by the following facts: 1. Atropine causes marked acceleration of the cardiac contractions that have been previously slowed by strophanthus. 2. Strophanthus does not slow cardiac contractions when they have been accelerated by atropine. Strophanthus, he

finds, also, increases blood-pressure, but the increase seems to be independent of the cardiac contractions. At any rate the arterial tension continues to rise, but the number of beats is not affected.—*Watch*, Nos. 40 and 41, 1887.

UNITED FRACTURE OF TOOTH-FANGS.—DR. WILLIAMSON, the President of the Odonto-Chirurgical Society of Scotland, exhibited recently an interesting case of fracture of the root of a central incisor, which bore evidence of having been united. There was a history of a blow in childhood, from which the right incisor received so much injury that its pulp died, as shown by its discolored appearance. But both teeth had done good service until the patient reached the age of 45, when the left central became so loose that it was removed with the fingers. A part of the fang, however, was left behind; but being loose, was easily extracted. On examination, it was found that the two fragments fitted accurately when placed in apposition, except when there was a little chipping at one edge. The fracture of the dentine was at a higher level than that of the cementum, so that the latter formed a sort of collar for the lower fragment. There was some thickening in parts of the cementum, and the whole of the pulp in the coronal fragment was calcified, and also the part close to the line of fracture in the other piece. Whether there was any cemental tissue coating over the fractured surfaces, as in one of Weld's cases, was uncertain, since the specimen was not subjected to microscopical examination. Hohl, Tomes, Hyrtl, and others have altogether collected only about a dozen cases of united fractures in human teeth, and several have been met with in the tusks of animals. There seems no physiological reason why these cases should be so rare for new cementum is capable of being formed at any period of life, and it is no uncommon occurrence for the pulp to resume its formative functions long after the cessation of regular calcification. Tomes points out that probably the difficulty of diagnosing fracture of the root leads to improper treatment, which does not give nature a chance. Moreover a blow sufficiently violent to cause fracture would generally injure the pulp, and bring about its destruction.—*Lancet*, Feb. 25, 1888.

TREATMENT OF ADVANCED CONDITIONS OF EQUINO-VARUS.—At the meeting of the Royal Academy of Medicine in Ireland, on January 20, 1888, MR. SWAN read a paper on the treatment of advanced conditions of equino-varus, which he maintained to be curable by proper treatment, carried out before the expiration of the first year of life, or before walking had commenced. After three or four years had elapsed a modified result might be obtained, but the treatment would be prolonged and difficult. When the patient had reached the age of 10 the tarsal bones were thickened; the large adventitious bursa was dense, and included in its base the cuboid and the tarsal end of the fifth metatarsal bones. In such a case ablation of a portion of the tarsal bones was indicated. The portion removed should consist of the anterior three fourths

of the cuboid bone, all the external cuneiform, except its posterior part, the proximal extremities of the third, fourth, and fifth metatarsal bones; and the apex of the wedge would consist of a portion of the middle cuneiform. The mobility of the foot would remain almost unimpaired; and as the metatarsal bones had their epiphyses at the distal end, it was probable the development of the foot would not be interfered with. He had performed this operation in thirty-four cases since 1876.—*British Medical Journal*, Feb. 11, 1888.

RESECTION OF THE RECTUM.—BARDENHEUER describes an operation for removing the rectum, leaving the sphincters untouched. The sacral ligaments and the sacrum itself are cut through, the rectum is brought into the wound by means of the index fingers, which can readily be introduced, and its fascial connections are stripped from it in the same manner. It is cut through well above the disease limits, its anterior attachments gently separated, and it is then severed about the sphincter. The two remaining portions are carefully stitched together. The cut through the sphincter with which the operation begins is left unsewed. Bleeding is stopped by direct pressure with carbolized sponges. The operation can be performed in fifteen or, at the most, thirty minutes, and from two to four ligatures are now employed, when formerly, in similar operations, from fifty to sixty were necessary.—*Volkmann's Sammlung klinische Vorträge*, No. 298.

USES OF BORACIC ACID.—It is well known that boracic acid is practically harmless. GAUCHER has found it useful in impetigo, and the more so because it is without color or odor. The scabs should be removed by means of poultices, and a solution of boracic acid in glycerite of starch, 1:10, is then applied. Gaucher has cured a case of tuberculosis of the skin in the same way, and has given the acid in gr. 10 doses in pulmonary tuberculosis, with advantage. The urine eliminates the acid readily and rapidly, and, as would be supposed, boracic acid is useful internally in cystitis, especially of old men.—*L'Union Médicale*, Jan. 31, 1888.

INTESTINAL ANTISEPTIC IN TYPHOID FEVER.—PARA, in an inaugural *Thèse* asserts the necessity for the internal use of antiseptics in typhoid. The antiseptic should be soluble, and should be given in small doses. Para finds the most satisfactory substance to be a mixture of naphthol and salicylate of bismuth, aa gr. 8, in powder; half the quantity for children. This should be preceded by a calomel purge—gr. 4 to 6. The stools decrease in number under this treatment, tympanites lessens, sordes disappear, the tongue moistens, and the liver and spleen diminish.—*Rev. Gén. de Clin. et de Thérap.*, Jan. 26, 1888.

OBSTRUCTED NASAL BREATHING, says BARTH, of Berlin, may cause acute or chronic suppurative inflammation of the middle ear, and that middle ear disease cannot be successfully treated while the nasal passages are obstructed.

THE

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PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MARCH 24, 1888.

ANTISEPTIC AND ANTIPYRETIC TREATMENT
OF PHTHISIS.

It is not our purpose now to go over the field of the antiseptic and antipyretic treatment of phthisis, but only to notice a paper read before the Bath and Bristol Branch of the British Medical Association, by DR. W. H. SPENCER, of Bristol, in which he gives the records of two cases of phthisis treated by antiseptics and antipyretics, which may be found in the *British Medical Journal*, of January 28, 1888. And while it may be said that two cases, however complete the records and successful the treatment, can scarcely be admitted as positive proof of the value of any particular mode of treatment, it may be said of the cases recorded by Dr. Spencer that they are valuable as showing how and what antiseptics and antipyretics may be used.

The two cases were, in brief: One case of acute pneumonia of the left lung in a girl 20 years old; the pneumonia passed rapidly into acute tubercular phthisis, which was almost completely repaired by fibroid substitution, and the bacilli, that were abundant during the acute stages, disappeared as recovery progressed; complete recovery was almost assured, when sudden profuse hæmoptysis caused death: the case was ten months in duration. The second case was one of acute double pneumonia in a young woman of 22 years, which passed into acute tubercular phthisis; there was complete recovery, which was maintained at the end of twelve months; the duration of the case was five months.

The pathological conditions and clinical features

of the cases, as set forth in the clinical histories may be recapitulated thus: An acute pneumonic condition of the lower lobes of the lungs at first—both lobes in one case—with concomitant general and special symptoms, showing the disease to be acute croupous pneumonia. A transition from the pneumonic condition into an acute tubercular and phthisical condition, beginning in the lower lobes. Thence, invasion of the apices, after the phthisical condition of the bases was well assured. Rapid breaking down and formation of vomice at both base and apex. Then, the discovery of the tubercle bacillus in the sputa confirmed the diagnosis, and indicated the general and local treatment. After this there was repair of the lung tissue by fibroid substitution. This repair proceeded simultaneously both at base and apex, and was traced by physical signs distinctly during its progress. The profuse hæmoptysis in the first case left no doubt as to the nature of the lesion, and was doubtless caused by the contraction of the lung-tissue, whose building up brought death before healing was completed.

It will be of interest to recapitulate the treatment of these cases, applying the term "local treatment" to the means adopted with the special object of influencing the local mischief of the lungs—the antiseptics. In the first case, along with other remedies, a mixture of sulphuric acid, bark, and ether was used pretty continuously throughout the case, cod-liver oil being used at intervals for short periods, as it was not well borne. Kairin and quinine were the antipyretics used, the former always reducing the temperature, and quickly, but the fall of temperature was transient, and the resulting depression marked. At intervals and for a short time quinine was used in large doses, but without any effect on the general progress of the case. Throughout the second case a mixture of sulphuric acid and quinine (4 grains), or one of tincture of perchloride of iron and quinine was used, and cod-liver oil, which was well borne, was taken for a considerable time. The antipyretics used were salicylic acid and quinine, the former with good results as regards a steady and continuous reduction of temperature, but, though combined with ether, the depressing effects were sometimes bad. The quinine given in this case was used in moderate doses, and with unqualified success.

The local treatment consisted, in the first place, of iodoform, which was given in 1-grain doses in pill form, 6 grains in 24 hours; in both cases it was given for long periods. Attempts were made to increase the dose to 2 grains, but this dose always caused pain and gastric disturbance. In the first case the

drug was taken for nine months continuously, with the exception of two weeks. The second part of the local treatment consisted in the inhalation of the vapor of the oil of eucalyptus, though this was used only in the first case, and here along with the iodoform. It was inhaled by means of a celluloid respirator inhaler, worn continuously except when taking food or sleeping. From this there was no nausea or other unpleasant effect.

The diet throughout the cases was most liberal. As soon as the patients began to feel the effects of the iodoform the appetite improved remarkably, and good food was supplied in liberal quantities, some stout being allowed with the dinner after the return of the appetite.

The conclusions drawn by Dr. Spencer as regards the special methods of the treatment by iodoform and eucalyptol are:

1. He sees no reason to doubt that, when iodoform is given in doses that the stomach will bear well, and given frequently and continuously for long periods, it is absorbed into the circulation; and in the lungs, in whatever form it be, manifests its antiseptic (or antibacillary) action and properties. The good effects of iodoform so administered, in phthisical conditions, are too unequivocal to be gainsaid, however they may be produced.

2. He sees no reason to doubt that when the vapor of eucalyptol (or other antiseptic vapor that can be tolerated equally well) is inhaled continuously and for long periods, it reaches the residual air in the lungs; and so externally, as it were, bathes the affected tissues or suppurating cavities that may be open to the ingress of the air.

3. Thus, he thinks, we may have antiseptic remedies, not antagonistic, brought up on two sides to the sites of the inflammatory lung lesion, or the sites of bacillary activity; and these antiseptics, mutually coöperative, do affect for good both the inflammatory process and the bacillary activity, and bring about repair by the mode of organization after suppuration or fibroid substitution.

4. He thinks it both desirable and correct to treat pyrexia of acute phthisical processes, whether the temperature be high or moderate, by and for itself. He thinks that quinine, used as in the second case, promises great things for the future in this respect. He thinks that no other special antipyretic than quinine should be used in phthisis; and quinine serves other purposes as well when used as an antipyretic in moderate doses. It succeeded three times in succession in the second case in controlling the pyrexia—not the temperature merely.

In the treatment of these cases it is the object to bring about healing of the damaged lung-tissue, and this by means of fibroid substitution. "In order to attain this end, we must secure the same conditions and adopt similar measures, if we can by any means compass it, to those we find successful in dealing with suppurations, ulcerations, and the like lesions, in parts exposed to view. To secure these conditions we should adopt measures for supplying adequate nutrition—that is, adequate anabolism of tissue and the storing of energy—in the body generally, and in the damaged part in particular. We should deal with pyrexia on its own account, as a general and constitutional state, apart from the local suppuration or ulceration (as by quinine). We should bring the lesion under the influence of antiseptic remedies, both by internal medication (as by iodoform), and by external applications (as by inhalations of eucalyptol); and the application and influence of the antiseptic should be complete, continuous, and prolonged.

THE BILL (H. R. 1526) TO PREVENT THE INTRODUCTION OF CONTAGIOUS AND INFECTIOUS DISEASES AND TO ESTABLISH A BUREAU OF HEALTH.

This is the title of a Bill now before the House of Representatives in Washington, and from some paragraphs in both the secular and medical press, we supposed it had been prepared for the purpose of covering the important recommendations made by the committee of the Philadelphia College of Physicians, several months since, and which we concisely stated in the leading article of this JOURNAL for February 4, 1888. Those recommendations directly and strongly urged the establishment of a uniform system of maritime quarantine and health protection for the whole country under the National Government, instead of the present separate State quarantine arrangements. Without expressing any opinion of our own, we simply placed the several propositions of the committee before the readers of THE JOURNAL, and asked for them the careful attention demanded by the interests involved.

After examining the provisions of the Bill now before Congress, however, we find that it covers none of the important recommendations of the committee to which we have referred, but simply establishes a "Bureau of Health" in the Department of the Interior in addition to the U. S. Marine Hospital Service, already in the Treasury Department, and provides for the appointment of a Commissioner of Health, some of whose most important duties are

the same as are now imposed by existing laws upon the Supervising Surgeon-General of the Marine Hospital Service; and still does not go far enough in its provisions to supersede or render unnecessary the latter Service.

The adoption of the bill now before Congress would, therefore, bring into existence under these Departments of the Government two distinct medical organizations, one called the Bureau of Health, the other the United States Marine Hospital Service, each under a chief officer appointed by the President of the United States, and both subordinate to a Department Secretary. If it were desirable to convert these Departments into laboratories for the special cultivation and perpetuation of intrigues, jealousies, and divided councils, concerning all medical and health matters legitimately belonging to the General Government, no better plan could be devised than the one now before Congress. We have no special medical favorites whom we are anxious to keep in office, and no medical friends we desire to nominate for a new office; but we do think that all the medical, sanitary and quarantine interest belonging properly to the General Government, outside of the Army and Navy Departments, should be under one organization with a single intelligent and efficient head. Whether that *head* is called a Supervising Surgeon-General or a Commissioner of Health, is of no possible importance to the people whose health interests he is to promote.

SWINE PLAGUE OR HOG CHOLERA IN FRANCE.—In the "weekly abstract of sanitary reports," issued from the office of the Supervising Surgeon-General of the U. S. Marine Hospital service March 16, 1888, is an interesting report of a formidable epidemic among the swine in the vicinity of Marseilles, which on investigation appear to be identical with the disease known in this country as "hog cholera." It is estimated that more than 30,000 swine have died of the disease between June, 1887, and February 1, 1888, in the department of Marseilles. Though actively contagious, its origin can be traced to no foreign source, as there have been no importations of either swine or pork into the South of France for several years.

DIPLOMA EXTRAORDINARY.—At Albany, N. Y., a man calling himself Dr. Richard M. Dayton, was arrested on the 19th inst. on a charge of malpractice in causing the death of Mary Willett. He claimed to be a graduate of the "American Health College,

Cincinnati," for teaching and practicing the "vitalistic" system, including cures for all diseases of the body and soul. The diploma sets forth that Dayton has been fully instructed and is amply qualified. It authorizes him to legally practice the system anywhere in the treatment of all physical and mental diseases and to lawfully receive compensation therefor, and "in virtue of our religious organization and second incorporation, we also constitute and ordain him minister of the gospel of life and authorize him to preach and to solemnize marriage according to law, to attend funerals, and to lawfully perform all ministerial offices; and by these presents we do fully constitute him doctor of health and minister of life, this 27th day of November, 1886."

THE PRIZES OFFERED BY THE NEW YORK MEDICO-LEGAL SOCIETY, of \$100, \$75, and \$50, for the best, second best, and third best original essay on "any subject within the domain of medical jurisprudence," are by recent action of the Society, extended to June 1, 1888; on or before which time all essays, designed for that purpose, should be in the hands of Clark Bell, 57 Broadway, N. Y., President of the Society.

DEATH OF DR. EDWARD G. NEWHALL.—Dr. E. G. Newhall, a prominent physician of Galena, Ill., died in that city on March 20. He was born in Galena in 1844, and was graduated from the medical department of Harvard in 1869. He was Mayor of Galena for two terms, and was for many years a member of the Board of Education.

ASSOCIATION ITEMS.

PARTIAL PROGRAMME OF THE SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

The following papers have been offered to the Section on Obstetrics and Diseases of Women:

The Address of the Chairman, "How Gynecology is Taught," by Ely Van de Warker, M.D., Syracuse, N. Y.

"Separation of the Symphysis Pubis in Labor and its Treatment," by R. B. Bontecou, M.D., Troy, N. Y.

"A Plea for Early Operative Interference in Cases of obscure Pelvic Pain, and recurrent attacks of Pelvic Inflammation in Women," by Rufus B. Hall, M.D., Cincinnati, O.

"Exploratory Laparotomy," by Henry O. Marcy, M.D., Boston, Mass.

Any other members desirous of contributing papers to this Section are requested to send the titles at once

to the Chairman, Ely Van de Warker, M.D., Syracuse, N. Y.

PARTIAL PROGRAMME OF THE SECTION OF STATE
MEDICINE.

Any members desirous of reading papers before this Section are desired to notify its officers at once.

At the coming meeting of the American Medical Association at Cincinnati, Ohio, May 8, 9, 10 and 11, papers are expected before the Section on State Medicine, as follows:

"The Malarial Germ," by Prof. William Osler, M.D., Philadelphia, Pa.

"The Causation of the Essential Fevers," by Prof. Victor C. Vaughan, M.D., Ann Arbor, Mich.

"The Internal Origin of Fevers," by J. A. Larabee, M.D., Louisville, Ky.

"Atmospheric Temperature and Intermittent Fever," by Henry B. Baker, M.D. Lansing, Mich.

—By J. N. McCormack, M.D., Bowling Green, Ky.

"Report of Committee on Form of Law for Regulation of Practice of Medicine," Perry H. Millard, M.D., Chairman.

If those who are to contribute papers see any error in the title as here given, they will confer a favor by notifying the Secretary of the Section, S. T. Armstrong, M.D., Marine Hospital Service, New York City, or the undersigned.

HENRY B. BAKER, M.D.,

Chairman of Section on State Medicine, American Medical Association.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, February 20, 1888.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE
CHAIR.

DR. F. E. WAXHAM exhibited an

IMPROVED LARYNGEAL TUBE.

(See Department of New Instruments.)

DR. F. O. STOCKTON: It seems to me that there are two or three features in these tubes which are radically wrong. In the first place, the hinge exposes a roughened surface on the inner side of the tube which might afford a lodgment to any membrane which may be loosened and worked into the tube from below, and prevent its passing out. Not only that, but in this hinged opening there is a chance for the lodgment of septic matter, so that all tubes must be very carefully disinfected, and every one does not believe in such thorough antiseptic measures as some of us do.

Another point is the action of the epiglottis. Those who have read the abstracts of the International Medical Congress at Washington, will remember the paper by Carmalt Jones, of London, upon the action of the epiglottis in swallowing. While I

do not agree entirely with Dr. Jones, of London, I believe its ordinary action is the true one. We are taught that it acts like a trap-door, that it closes over the entrance to the larynx. I do not believe it has any such action; the muscles attached to it are not sufficient to cause such an action; the base of the tongue does not expand back and downwards sufficiently to cause such action. While it may, to a limited extent, be pressed backward by the base of the tongue, I believe there is another action of the epiglottis than guarding the entrance to the larynx from foods and liquids. We have ascertained this much from experiments. We have taken birds and animals and removed the epiglottis and found that liquid and food does not enter the larynx when they swallow. We have seen it in man, when from ulceration the epiglottis is destroyed, they are still able to swallow food and liquids with impunity; so it seems to me the lid on this tube is of very little benefit. It seems to me that the fault in intubation is that we do not intube deep enough, making the shoulders thinner and introducing them below the false vocal cords so that they rest upon the true vocal cords, and then the false vocal cords can close up against themselves and close the entrance to the glottis. I think the mistake in intubing is that we have let the tube rest on the false instead of the true vocal cords.

DR. E. F. INGALS: I am much interested in this device of Dr. Waxham's; it seems to me an excellent idea, and I fail to see the many objections that Dr. Stockton has mentioned. I apprehend that the amount of mucous, or false membrane, or septic material, that would catch about that little hinge would be a trifling matter considering the large amount already in the throat. It would seem from the report that this tube has acted favorably in some cases. I do not think the administration of liquids is as important as is commonly supposed. In this disease we like patients to have food, but for the four or five days that they wear this tube I believe it of little consequence whether they take either liquid or solid food; there is no danger of starvation.

In the past week I have seen a case of colitis in a child, who was sick three days without taking a particle of food, not even a drop of milk, and I never saw a patient do as well as that child did, with such a disease. I think we often make a mistake in attempting to feed our patients so much, thinking we are building them up when we are really retarding their recovery, because the foods taken are not digested.

I do not fully coincide with Dr. Stockton about the action of the epiglottis; I believe that the epiglottis has a very important function. The fact that it may be removed and a person swallow well is nothing. It certainly covers the larynx in ordinary deglutition, and I think that is its function. The elevation of the larynx and pressing backward of the tongue during deglutition is sufficient in the majority of cases to cause the epiglottis to hold accurately over the larynx, though I confess it is not always sufficient, else patients would not have the trouble they experience from partial paralysis of the de-

pressor muscles. The gentleman's remarks with reference to seating the tube low down do not seem to me borne out by the experience of those who have had the greatest experience in intubation. The danger of tubes passing into the trachea I think has been very much underestimated by the profession; it is probable that when this accident occurs we ordinarily hear nothing about it. Not long since I heard of a case which seemed authentic, at the autopsy of which the tube was found in the bronchus. I had myself an unfortunate case this winter. The tube introduced was an ordinary O'Dwyer tube with a good sized head. The child did well and seemed to have recovered, when on the fifth day I attempted to extract the tube. As I had the tube nearly out the extractor slipped; I tried repeatedly, and the extractor slipped again and again, until finally the tube slipped into the trachea, and I had to do tracheotomy to remove it. About two hours afterwards, during the absence of the attending physician, the child died. The friends insist that it died from the shock of the operation. Any one who has talked with Dr. O'Dwyer must think his experiments in this matter have been very thorough; I certainly am willing to accept his conclusions as to the tube and the mode of using it.

DR. MOREAU R. BROWN: I think the tube shows a great deal of ingenuity on the part of Dr. Waxham, and looks like something in the right direction. The tubes generally used are by no means perfect, and we are anxious for an improvement. This appears to be a great advancement on what we have already seen, and I shall look with interest for further reports from its use. I agree with Dr. Ingals in his statement that the valve is not apt to catch much septic material, as it is very smooth in all its parts, and so well made there is not much chance for anything to lodge on it.

DR. WAXHAM, in closing the discussion, said: The first speaker raised an objection to the tubes on account of the danger from septic poisoning from collection of septic matter around the spring. It is always my custom, after using a tube, to soak it in 95 per cent. carbolic acid, and I am quite positive there would be no danger from sepsis after such a treatment. I think there is no danger from accumulation of mucous about the hinge.

In regard to deep tubing: I have passed through that experience, and I can see no advantage in that method over the high tubage. Indeed, during the early history of intubation, for a long time I used tubes with the small heads, so small they would rest below the false vocal cords on the true vocal cords, and yet there was the same difficulty in swallowing liquids. Dr. O'Dwyer's experience has been the same; he claims that a child will swallow food better with the larger heads than with the smaller ones first used.

These instruments were made for me by Mr. Truax, and I think the instruments should be made only by the most reliable firms, and should be thoroughly inspected by an expert before they are sent out. I am about to suggest a further change: This wire is twisted about a pivot which controls the epiglottis.

I shall suggest that an opening be drilled through the pivot and a wire passed through it instead of around it, and I think there will be still less risk of impairment of the spring. This, together with the gold spring, I think will overcome all difficulties.

DR. STOCKTON: I think Dr. Ingals misunderstood me in regard to the head of this tube. I did not mean a smaller head, but thin from above downward, not laterally small.

DISCUSSION ON DR. INGALS' EXHIBITION OF INHALERS, ALREADY PUBLISHED IN THE JOURNAL.

(See JOURNAL of Feb. 18, p. 213.)

DR. MOREAU R. BROWN: The tubes are very satisfactory; I have a set of them in use at my office. The Davidson No. 25 I have previously used for general work and found it to be a better spray than we had before the introduction of these by Dr. Ingals. The objection to most atomizing tubes is the air pressure required to create a spray is so great that, when thrown into the nose, the force will undoubtedly prove a source of irritation and cause a swelling of the turbinated bodies. With the exception of their use in atrophic catarrh, I have entirely abandoned the Sass tubes and substituted the Davidson, and find the spray made by the latter desirable in almost all the forms of nasal catarrh, superior to cotton or the brush. This spray is thrown in with little force, lightly deposited upon the mucous membrane without creating irritation.

DR. C. S. BACON exhibited a patient with

SARCOMA OF THE NOSE.

The patient I have to show to-night is 21 years of age. His family history is good; none of his relatives have had tumors of any kind. Some time in December, two years ago, he noticed a swelling in the right nostril. About a week after he first noticed the tumor in the nose he went to Dr. Gunn at the Presbyterian Hospital, and the tumor was removed. Shortly after the tumor was removed the nose was swollen on the outside; nothing further was done, however, until the following August (1886); at that time the tumor had grown to about the size of a half walnut and caused some discomfort. He again went to Dr. Gunn at the Presbyterian Hospital and the tumor was removed by cutting through from the outside. No microscopic examination was made of either of these growths. The recurrence of the growth was gradual afterwards, and nothing further was done until the spring of 1887. About April, 1887, the patient went to Dr. Fenger at the Emergency Hospital. At that time the tumor was considerably larger than it was at the time of its last removal. By the kindness of Dr. Fenger I am able to show you photographs of the patient as he appeared when he was under Dr. Fenger's care. The tumor was removed by Dr. Fenger four or five times. The recurrence was very rapid; in about two weeks it reached its original size. At that time there was some talk about a radical operation, removing a large part of the upper jaw, but it was not done. After the fourth or fifth removal the patient passed from the hands of Dr. Fenger and another surgeon, Dr. Owens, was called in. He made a diagnosis of ma-

lignant tumor and said he did not think the patient's life would be materially prolonged by an operation. Three or four weeks after the last removal of the tumor, in the latter part of July, the patient came under the care of Dr. Baxter at the Alexian Brothers' Hospital. At that time the tumor was much larger than is shown by the photographs; it covered a large part of the right side of the face, extending from above the eyebrow to below the mouth, closing the right eye and extending to the left, partially closing the left eye. It was an angry-looking mass. There had been some bleeding, which had been checked by a styptic solution. The growth had not been cleansed on account of the bleeding, and it was very foul. The patient had some fever and was in quite a serious condition on account of blood and septic infection. The tumor was removed, causing considerable bleeding; the active cautery was applied, and also a styptic solution. One week later the growth had returned. This time the patient was chloroformed and the right common carotid artery tied, and the growth again removed. The bleeding from the tumor was considerable; it was partly on that account, but mainly on account of the hope of influencing the growth, that the artery was tied. The benefit of the ligation was apparent; the recurrence was not as rapid as before. However, there was a recurrence; it began to grow shortly after the ligation of the artery, but not as rapidly, and from that time the tumor was removed four times at intervals of three or four weeks. The growth reached perhaps the size shown in the photographs in the course of four weeks, not being nearly as rapid in recurrence as before the ligation of the carotid. The last removal was in the latter part of October, and from that time to this there has been no recurrence of the tumor. Two or three weeks after the last operation the surface had granulated over, and for the last ten or twelve weeks there has been no change in the appearance. The last operation was like the others with the exception that the cautery was not applied; it was simply that of gouging out the tumor; it was necessary to remove it as rapidly as possible on account of the bleeding. In the course of the operation a part of the septum was removed, almost all of the middle turbinated bone and a part of the superior turbinated bone. I am sorry that I cannot present a section of the tumor, but none were saved because the diagnosis seemed plain enough, and it was hardly expected the patient would recover. It was certainly an unpromising case. The diagnosis of sarcoma was the same as made at the Emergency Hospital. The case seemed worthy of presenting on account of the fact that it has now gone about four months without any recurrence. We all know how hopeless sarcomata of the nose are generally considered, especially cases like this, where the growth recurs so rapidly. The patient is here, and all who wish will have an opportunity of looking at the face as it now appears. I shall be interested in hearing the opinion of any who have had experience on the subject as to the probable effect of ligation of the artery in diminishing the rapidity of the growth.

DR. MOREAU R. BROWN: A case was brought to

the Polyclinic Hospital five or six weeks ago by Dr. Hoechler and referred to me for operation. The history was that the man had had removed at various times, from the right nasal cavity, some six or eight polypi which presented the appearance of the ordinary gelatinous polyp or myoma of the nose. Within the next three or four days after the last operation for the removal of these polypi, which was last summer, the right nostril became suddenly occluded and remained so up to the time of the operation presently to be described. I was unable to learn the cause of this sudden occlusion; but during the fall, about November, the patient went East, and while there consulted a physician who discovered and attempted to remove a growth which filled the right nasal cavity, but as the hemorrhage produced was so severe he gave up the operation. The man came back to Chicago with the blood oozing from the tumor. Next, three or four unsuccessful attempts were made, which produced further hemorrhage, to remove the tumor by the snare. When the man was presented at the Polyclinic it was marked that he was about 45 years of age and of a healthy appearance. On looking into the right nostril there was seen a somewhat pale tumor blocking up the cavity; the surface was irregular and bled very readily on being touched. It was only the surface which was exposed to view that afterwards proved to be irregular, and which irregularity I attributed due to the operations which had been attempted.

Dr. Miller passed his finger between the tumor and the roof of the nostril inside, and broke up a small attachment to the middle turbinated body; the main attachment being to the septum and floor of the nose. I was then able to and passed a platinum wire around the growth and removed it by the galvanocautery. After removing the tumor from the nose there was no further hemorrhage. The tumor was about the size of a hen's egg, exceedingly soft, of a dark purple color, smooth on the surface and of loose texture, the lower part or base being harder and more dense and firm in texture. I could find no other growths in the man's nose, either polypoid or sarcomatous; the cavity seemed perfectly clear and the man was able to breathe through it with ease. Some three or four days after I did a second operation, removing the anterior extremity of the middle turbinated body, which had been the superior attachment of the tumor. The lower attachment, or the base of the tumor, I should imagine was about 1 inch in length from front to rear, and the same measurement across the septum and the floor of the nose. This I removed as thoroughly as possible, destroying all the tissues down to the bone and cartilage with the galvanocautery knife. The tumor was afterwards examined with the microscope by Dr. Harris and our President, Dr. Belfield, who pronounced it a sarcoma. I have reason to think there has not been any return or indication of it. It is known that these sarcomata, when removed repeatedly, will sometimes cease to return, although at first they may have shown great malignancy. Why this is so is impossible to say.

DR. E. F. INGALS: I have seen several cases similar to this, though with one exception not so bad;

perhaps three or four, in which I have found within the nasal cavity what seemed to me at first simply a fibrous tumor, but upon microscopic examination the sarcomatous appearance was so marked that the microscopist gave me a very unfavorable prognosis. One of the cases I did nothing whatever with, as it had gone too far. It was very malignant and the patient only lived a few months; but in two other cases I have removed the growth repeatedly, perhaps five or six times, and eventually the patients disappeared. Whether the growths returned or not I do not know. I heard from one of the young men a week or two ago and he had gone six or eight months without a recurrence. The other had gone three or four months without recurrence when I last heard of him. In one case, after repeated removals, the growth took on rapid growth which speedily caused the patient's death.

BALTIMORE ACADEMY OF MEDICINE.

Stated Meeting, February 21, 1888.

DR. JAMES CAREY THOMAS IN THE CHAIR.

DR. THOMAS F. MURDOCH reported a case of
DOUBLE ANEURISM OF THE ASCENDING AORTA.

On February 13, at 8 P.M., he was summoned to see Mr. B., and found him complaining of nausea, great pain in the epigastric region, very sensitive to pressure, eructating great quantities of wind and his heart beating tumultuously, so that it was impossible to hear the sounds of the heart to determine if there was any disease of the valves. The patient informed him that he had dinner at 3 o'clock at a restaurant, consisting of a beefsteak and a potato, and shortly afterwards was seized with nausea, pain in the stomach, and tumultuous action of his heart, which obliged him to go home, but did not send for Dr. Murdoch until the hour above named. He prescribed an antispasmodic mixture, and after taking two doses, he left the patient somewhat relieved and ordered a dose of castor oil to be taken in the morning. Would have given him an emetic, but he informed Dr. Murdoch that he was never able to vomit. Called at 1 A.M., the 14th, still suffering, ordered an enema, and at his own suggestion gave him half a tumbler of hunyadi water. The enema brought away some hardened feces, and, at the same time, he *did* vomit some fluid, but nothing that he had eaten. He expressed himself as feeling much better than he had done since he was first taken. Remained with him until 4 A.M., and left him comfortable, although his heart was acting tumultuously.

Called again at 7.30 A.M. Prescribed

B. Tr. digitalis.....	5 j
Morphia sulph.....	gr. j
Aqua camphora.....	5 j
Sig. Teaspoonful every two hours.	

Of this he took one dose.

Dr. Salzer met Dr. Murdoch in consultation at 9 A.M. Dr. Salzer had attended Mr. B. last summer

at Bedford Springs. He agreed with Dr. Murdoch that the action of his heart was sympathetic, and informed him that he had frequently examined his heart, and also his urine, and he was *certain* there was no disease of either heart or kidneys. Had treated him for gastric trouble. After much consideration they determined to give him 20 grs. of ipeca in compressed pills; *this* instead of vomiting him, had the most soothing effect, and he got some sleep, the first he had had. After fifteen minutes, repeated the ipecac and he slept for nearly two hours waking occasionally. Dr. S. left at 11.30, considering him much better. Dr. Murdoch remained until 12.30, thinking he could leave him for an hour or so, but had not been away more than thirty minutes when the patient expired suddenly.

Report of autopsy made on the body of Mr. B. by Dr. W. T. Councilman.

February 15, 10 A.M., twenty hours after death. Body of medium size, slightly built. Rigor mortis well marked. On the right upper arm, about one and one-half inches below the head of the humerus was depressed stellate cicatrix, and on the anterior aspect of the body between the cartilages of the second and third ribs and one-half inch to the right of the sternum was a similar cicatrix. Left lung free from adhesions. Its tissue cedematous. The right lung firmly united to the chest-wall by old adhesions. Its tissue cedematous. In the left pleural cavity about one ounce of clear serum. The entire heart was enlarged, both ventricles, especially the left, somewhat dilated. The wall of left ventricle slightly thickened. The muscular tissue of heart flabby. All the valves of the heart were normal. The aorta atheromatous in its entire extent. In the aorta just above the aortic valves were two aneurisms, one opening in the sinus of Valsalva behind the right anterior valve, and one behind the posterior valve. The one to the right was the size of a black walnut, its opening into the aorta about three-fourths of an inch in diameter. The aneurism opening behind the posterior valve was not larger than a small hazelnut. In the wall of the right auricle there was an area about one inch in diameter where the wall was thin, anæmic, and in the middle of this a ragged opening the size of a No. 14 catheter which passed directly into the larger aneurism. Both aneurisms contained red coagula. Liver, kidneys and spleen congested. In the abdominal cavity about 3 per cent. of clear serum.

DR. T. A. ASHEV said, that through the courtesy of the attending physicians, he had witnessed the autopsy in the case reported by Dr. Murdoch. He had known this gentleman for a number of years, and was as much surprised as were his medical attendants at his sudden death. He had never attended the gentleman professionally, and therefore, had never examined his heart, but was aware of the fact that he was a frequent sufferer from attacks of indigestion which gave him much uneasiness and distress. At times he complained to his family of thoracic pains and of dyspnœa after exercise. He also complained of palpitation and of frequent action of the heart. The valves of the heart were

normal, and there were no physical signs present pointing to cardiac trouble. His medical attendants were therefore correct in assuming that illness was not referable to circulatory changes. The cause of sudden death was explained by the rupture of the aneurismal sac. In his judgment the disturbance of the circulation was primarily induced by the retching and vomiting, which induced sufficient pressure upon the already weakened aortic sac as to occasion rupture and sudden death. It is probable that rupture was in this wise hastened, but it would in all probability have occurred at an early date from mere attenuation, or physical exercise, had not the attack of indigestion occurred. Changes in the aorta had evidently been going on for some time, though no means of determining this fact were presented to his medical attendants. In the light of present circumstances, it was easy enough to construct a theory and establish a chain of evidence which would explain a result, but in dealing with conditions we were guided by facts in view and not by suppositions which only became clear after they are obtained from positive information. It was easy enough now to account for the presence of a condition since it had been discovered by post-mortem evidence, but this information was not possible before death. The treatment of the case was rational and not open to criticism. Who could have done better? This is a practical question to which each one must give a candid answer.

DR. JAMES CAREY THOMAS asked if atheroma could be diagnosed when not far advanced. He also spoke of venous engorgement which occurred in such cases.

DR. JOHN R. UHLER thought that if the physics of auscultation were better understood and more thoroughly studied, we might be better able to understand obscure cases. He referred to a similar case in his own practice. He was called to see a man one morning at nine, and found him with a pain in the chest, and unable to lie down. The patient died at 9 P.M. the same day with a sharp pain at the centre of the sternum. A diagnosis during life had not been made. The autopsy showed an aneurism which had burst in the mediastinum. The aneurism had probably been open for twelve hours, and the blood was leaking out all that time.

DR. F. T. MILES said, the history of this case helped to show that it was not necessary for the chambers of the heart to empty themselves to carry on its function. The right auricle in this case was probably always distended with blood. He recalled the case of a man who had attacks of spasm of the glottis, and whose circulation and breathing were impeded. No one had made a diagnosis. The autopsy showed an aneurism pressing on the trachea, and probably carrying on its effects through the recurrent laryngeal nerve. It was not easy to see why such attacks were paroxysmal, and not continuous. He thought that when an aneurism once burst, nothing could be more sudden than death.

DR. WILLIAM B. CANFIELD said he thought many cases were on record in which the patient had lived for twenty-four or forty-eight hours, or even longer

after the aneurism had broken. He had reported a case last year in which the symptoms, produced by pressure on the pneumogastric and recurrent laryngeal nerves were well marked. In this case there was hoarseness and stridulous breathing, and the pupil was also affected. The case had improved under the use of the iodides, the worst symptoms disappearing, but the patient passed out of his sight, and the diagnosis had never been confirmed by an autopsy. Several other physicians had also seen the case, and had pronounced it an aneurism of the aorta. The iodides, and particularly the iodide of sodium, had been much used of late in these cases. He had under observation at present a man who suffered with violent palpitation, cough, contraction of the left pupil, and he suspected an aneurism, but none could be found. The man had worked in lead, and had had lead colic. The iodides had done him good.

DR. F. T. MILES reported a case of

LABYRINTHINE VERTIGO

in a boy 16 years old, who had attacks like epilepsy. He would suddenly fall down and get up again, and when asked would say nothing was the matter. His eyes would roll. The important point was the loss of consciousness. The boy said he did not lose consciousness, and his friends said he did. It was difficult to say whether he did or not. Patients with *petit mal* often lose their consciousness without knowing it. This patient had fallen at times. He could walk a straight line without hesitation or deviation, but when he stood with closed eyes he went over to the left side. It was not locomotor ataxia; he could get no knee jerk out of him. He thought it was a case of labyrinthine vertigo. He had had otorrhea and loss of the drum membrane. This case was as interesting as some of Mr. Gowers. He laid much stress on the way in which he fell to the left. He thought tinnitus aurium was not sufficient to cause it. It was much like epilepsy.

DR. WILLIAM B. CANFIELD, in referring to this vertigo and falling to the left with closed eyes, asked Dr. Miles if a perfectly healthy individual, with one ear artificially stopped, would be apt to fall over on closing the eyes. The sense of hearing has much to do with preserving the equilibrium in total darkness, as any one might notice. It would be interesting to know if one totally deaf suffered any less from sea-sickness than others.

IDIOSYNCRASY TO IRON.

DR. THOS. E. MURDOCH, in treating a child with double lobular pneumonia, had used beef, wine and iron, and noticed that the child put its hand to its head, and on stopping this preparation the child grew better. He thought it was not the alcohol, as he had continued that. He attributed it to the iron, as the grandmother had always been unable to take iron. It was a remarkable case of heredity.

THE VOLCANIC ORIGIN OF EPIDEMICS is the title of a new book, by Dr. John Parkin, recently issued in London.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, December 16, 1887.

THE PRESIDENT, HENRY T. BYFORD, M.D., IN THE CHAIR.

THE PRESIDENT exhibited

A NEW UTERINE ELEVATOR.

and said: I have been in the habit, for a long time, of introducing an ordinary straight, hard rubber-intrauterine stem into the retroflexed uterus before replacing it, in order to stiffen or straighten it, and to serve as an indicator of the position of the fundus after it has ascended out of reach. Last summer a cutter showed me a uterine elevator, invented by Dr. Miller, of San Francisco, which consisted of a straight steel stem, fastened upon the end of a thimble, with the end in view of making the stem a continuation of the finger end. I was unable to use this one, because in bending my finger so as to push the cervix back in place my knuckle would catch against the posterior vaginal wall or pelvic floor. I therefore constructed this instrument. There are three stems: a jointed steel stem, like that upon the end of Emmet's elevator, and two copper ones of different sizes, slightly flexible. Any of these may be attached to a shovel-shaped piece in which the finger end lies at right angles to the stem. The cervix may thus be pushed backward or sideways, and the fundus pried forward. With the finger thus against the end of the stem, and practically against the cervix, we can calculate the position of the fundus, the amount of resistance to replacement, and avoid all violence and danger.

The Secretary read for Dr. F. W. Mercer, Chicago, a

REPORT OF A CASE OF TUMOR OF THE ILEUM;
DEATH FROM INTESTINAL HÆMORRHAGE;
EXTENSIVE COMPLICATING LESIONS.

The following history was communicated to me by Dr. Converse, the attending physician:

Annie W., single, æt. 34 years, was always considered in good health. Had menstruated regularly without undue pain till within the past year, when it was observed that the flow was not quite as copious as in health. All the other bodily functions had been regularly performed so far as the friends knew. Miss W. was of cheerful disposition, vivacious, and physically strong, being able to toss her sister's child, weighing about twenty pounds, up at arms length above her head.

About one year ago, she consulted a leading physician of this city to whom she complained of a throbbing sensation in the left inguinal region, and also of some slight digestive disorder. The doctor informed her that he considered the throbbing due to the presence of gas in the intestine, and prescribed some digestive. After this, the patient went along as usual, not making any special complaint, till the morning of October 16, 1887, when she said she felt tired, reclining upon the bed in her room. About 11 A.M. she had a movement of the bowels, consist-

ing almost entirely of blood, but not large in amount. Dr. C., who examined the stool, concluded it was due to "bleeding piles." Absolute rest was ordered. At 12.30 P.M., the patient left her bed and entered the bath-room, where she fainted while passing another bloody stool. She was carried back to bed, where she soon revived. Dr. C. saw her again, and ordered pyrogallic acid and ergot, with brandy at short intervals. From this time till 9 P.M., she grew very restless, having involuntary discharges of blood which were received upon cloths, making any accurate estimate of quantity impossible. At about the last named hour, I was called in consultation, and found the patient tossing from side to side of the bed, groaning, and complaining of pain in the umbilicus. The features looked shrunken and pinched, the surface blanched and clammy, the face very cold to the touch, and the pulse barely perceptible. In fact, the patient appeared moribund from hæmorrhage.

An examination of the abdomen was made, and the presence of a tumor, quite symmetrical, of globular form, was discovered in the median line, just above the pubes; an enlarged uterus was suspected as the source of the hæmorrhage, and an examination *per vaginam* was made, with the result that the os was found to be of pin-point character, cervix elongated, and giving no indications of hæmorrhage.

Hot-water bags and bottles were applied to the surface, warm blankets packed about the body, and brandy given subcutaneously with aromatic spirits of ammonium by the mouth. Transfusion was thought of, but, the means not being at hand, it was not tried. Dr. E. W. Sawyer was called, but little could be done, as the patient was now *in articulo mortis*.

Section, fourteen hours after death; Dr. E. D. Converse, Dr. E. W. Sawyer, Dr. W. Barry, Dr. Frank Andrews, and your reporter being present. The section was made by Dr. Frank Andrews. The body appeared well nourished; the rigor well marked. Upon reflecting the abdominal parietes, the intestines appeared rather pale, and not unduly distended. At the lower hypogastrium a tumor was found resting in the median line. It was globular, ten centimetres in diameter, and weighed 454 grams; was moderately firm in consistence, and attached by a slender pedicle to the small intestine (ileum), about fifteen inches above the cæcum. Upon section of the ileum, an oval opening was discovered upon its mucous surface, about four millimetres by three millimetres. This opening corresponded to the attached pedicle, and communicated directly with an artery of about four millimetre calibre. It was undoubtedly from this that the fatal hæmorrhage occurred. There were old and extensive adhesions of the intestines to the peritoneum. Both the right and left kidney showed a greatly reduced cortex; and the tubuli and pelvis were found filled with pus. The liver was very fatty and friable, breaking under pressure like old granular tallow. The uterus was converted into an irregular lobulated mass, consisting of fibroid tumors. The thorax was not opened.

DR. F. W. MERCER: I very much regret that I

have not the stained specimens to show you to-night. I have, however, examined the tissues, and the tumors of the uterus are intramural myomata. The tumor of the intestine is also a myoma. It is a very vascular structure. I have been unable to develop the literature on this subject; few, if any, such cases have been reported, and I have not been able to find a parallel case to the intestinal tumor, as regards the peculiarity of its attachment and the openness of the blood-vessels. Myomata are often very vascular.

DR. E. W. SAWYER: As a still further emphasis of the condition of this patient, I want to say that she filled a difficult clerical position, involving a good deal of labor, up to the day previous to her death. I have seen her in life for the last ten years, and knew her to be industrious and a healthy appearing woman.

DR. C. T. PARKES: It might be proper to suggest the idea that this was an angioma. The partial description that has been given would call my attention to growths of that character; its extreme vascularity; the size of the vessels entering into it; its position, differing in this respect from myoma. The tissue about the walls might be connective tissue, showing some evidence of muscular fibre. I speak merely from my experience. I have seen quite a number of myomata, but never saw any that showed the peculiarities of this specimen. It might have developed, as suggested by Dr. Dudley, in some other place, this being a foreign position. As to its attachment, I think it would be in reason to say that it might show muscular fibre, if it was an outgrowth from the intestine. I would not say, of course, that it is not a myoma.

DR. A. REEVES JACKSON: It seems remarkable that this should be a myomatous tumor when so little muscular structure can be found as a basis in the intestine. The case, too, is interesting and remarkable in its history, from which we learn that the woman had degeneration of long standing of a portion of the liver; that there were adhesions of the intestines to the abdominal wall, indicating the former existence of peritonitis; that there was a fibroma of the uterus; and yet, despite all these diseases, the patient was in good health up to a recent date. All this is very remarkable. I know that women can live and seem fairly healthy with a good deal of disease present, but such an amount as was present in this instance seems quite inconsistent with a condition of good health. It is exceedingly important that this specimen should be examined microscopically, because its nature must be of very great interest to the pathologist.

DR. E. C. DUDLEY reported a case of

VAGINAL HYSTERECTOMY FOR SARCOMA UTERI.

The patient, a multipara, 62 years of age, came to me from Dr. Sibree, of Sturgeon Bay, Wis. Dr. Sibree, several months before, had removed a soft, friable mass, filling the uterus and vagina. When the case came to my clinic at St. Luke's hospital, two months ago, the tumor, which had returned, enormously distended the uterus and vagina. Under

ether, the operation previously performed by Dr. Sibree was repeated, and a soft, friable mass, weighing not less than two pounds, was removed. The tumor was attached by a short pedicle, about three-fourths of an inch in diameter, to the left side of the uterus, about on a level with the os internum. The specimen was examined by Dr. Wing, who pronounced it to be a sarcoma; I therefore determined to remove the uterus *per vaginam*, which was done three weeks ago to-day.

The case is remarkable and interesting. Remarkable because sarcoma of the uterus is a somewhat rare disease, the number of cases on record being less than one hundred. Interesting because a method of operation was employed which has heretofore not been very much used—the method of Péan, *i.e.*, hæmostasis was secured entirely by means of pressure-forceps, no sutures or ligatures having been used. The cervical canal was first stuffed with absorbent cotton, and closed with a single suture, which was passed through the anterior and posterior lips. This was done in order to prevent any of the contents of the uterus from coming in contact with the perineum, in case it was found necessary to turn the cervix into the pelvic cavity. The cervix, seized with strong lock vulsellum forceps, was drawn to the vulva, and an incision was made with scissors entirely around the cervix at the utero-vaginal attachment; with the finger the post-cervical structures were torn away from the cervix, keeping close to the uterus until the cul-de-sac of Douglas was reached; with two fingers in the cul-de-sac of Douglas, it was easy to enlarge this opening by tearing, until I had reached the region of the broad ligament on either side; I then attempted to divide anteriorly in the same way, but, being solicitous about invading the bladder, I kept so close to the uterus as actually to tear up a layer of the muscular structures. I had carried this process beyond the vesico-uterine attachments, indeed almost to the fundus, before I discovered that I must be beyond the region of the bladder. I did not at once enter the anterior cul-de-sac, but, taking a pressure-forceps with long blade in the right hand, I passed the index finger of the left through the posterior opening, and hooked the point of the finger around the left broad ligament; then, with the lower blade of the forceps in the posterior opening I punched through to the finger tip with the other blade, and locked the forceps, thus securing the left broad ligament. The right broad ligament was secured in the same way, and the utero-vesical attachment severed with the scissors and the uterus removed. Upon putting the forceps upon the right broad ligament, and finding that the disease had extended through the uterine wall on that side and involved the uterine end of the right broad ligament, I pulled the ligament out and put on another pair of forceps back of those originally used. These forceps included the ovary and Fallopian tube on that side, and I hope all the disease.

The only difficulty in this operation was in consequence of extensive adhesions of the uterus posteriorly to the small intestine. At least twenty minutes were consumed in carefully breaking up these

adhesions. The right ovary and tube came down and were secured in the grasp of the forceps, but the patient having passed the menopause, the left were not removed. Several bleeding points anterior and posterior to the uterus were secured by means of ordinary pressure-forceps, all of which were left in the vagina.

Instead of closing the abdominal wound with sutures, the peritoneal edges anteriorly and posteriorly were caught at two points with lock-forceps, so that in reality the peritoneal wound was closed at these points, leaving space enough between the forceps for drainage. All the forceps except those on the broad ligaments were removed in twenty-four hours; these were removed at the end of forty-eight hours. It would possibly be safe to remove even the forceps from the broad ligaments in twenty-four hours, but leaving them forty-eight hours is an additional safeguard and insures more prompt separation of the necrosed tissues within their grasp.

The patient had no bad symptom until the fourth day after the operation, when she developed a slightly elevated temperature and a pulse of 140, very weak and almost like the pulse of collapse, but with a moderate amount of stimulation, circulation greatly improved and was normal again in twenty-four hours. It is now three weeks since the operation, she has had no further trouble, and is sitting up. I learned after this trouble with the circulation what I had not recognized before, and what would have deterred me from operating had I known it, that the patient had a fatty heart.

I think this method of removing the uterus will be generally adopted. The operation in this case lasted forty minutes. If it had not been for the adhesions it could have been done in twenty minutes without difficulty.

This operation may have a wider field than vaginal hysterectomy; I have determined that the next case I have of uterine myoma, in which supra-vaginal hysterectomy would ordinarily be performed, to open the abdomen, lift the tumor out through the abdominal wound, and then, instead of using the *serre-neud*, to secure the broad ligaments by means of lock-forceps in the vagina. It would probably be easy, by having the index and middle fingers in the pelvic cavity, one on either side of the broad ligament as a guide, to force the blades of the forceps through close to the uterus on either side of the ligament to the finger tips, and then, having secured both ligaments, sever the anterior and posterior uterine attachments. The peritoneal edges of the vaginal wound might then be closed with a continuous catgut suture, or seized with lock-forceps in the vagina, as already described. This method of performing hysterectomy for myoma when the tumor is too large to be delivered through the vagina, is worth trying; it would enable the operator to dispense with all extra-peritoneal methods of hæmostasis, and might afford all the advantages which belong to intra-peritoneal hæmostasis for ovariectomy.

THE PRESIDENT reported

A CASE OF VAGINAL HYSTERECTOMY,
and exhibited specimen.

Miss P., is a virgin, 57 years of age; ceased menstruating over ten years ago. About eight months ago she had a slight hæmorrhage from the uterus, and for five months before the operation had been bleeding (sometimes profusely) most of the time. She had been bedridden for five weeks, suffered frequently with severe pain in the lower part of the abdomen, and was the most waxy, anæmic looking person I remember to have seen. Her pulse ranged from 100 to 120. Her evening temperature, from the normal in the morning, ran up to 101° F., and sometimes higher upon the few evenings before the operation. When not bleeding she had an offensive vaginal discharge. She was subject to daily hysterical attacks in which she and her friends feared she might die. A loud, cardiac murmur could be heard. Vaginal indagation revealed a friable vascular mass about the size of a hen's egg, projecting from the cervix into the vagina, and continuous with the posterior lip. A piece taken from the lower end was examined and pronounced papilloma. I had considered it cancer and had contemplated hysterectomy, but felt relieved at the diagnosis, because the operation would have been long and difficult on account of the virgin and senile condition of the vagina and perineum, and the success would have been doubtful by reason of the extreme anæmia and nervous prostration. I also feared she would not bear anæsthesia well for the necessary length of time.

She was anæsthetized at 9 A.M., Dec. 7, for the purpose of curetting, but the posterior wall of the cervix as far as the internal os was found so degenerated that a complete removal was considered impossible without breaking into the cul-de-sac of Douglas. The posterior vaginal wall was also infiltrated behind the cervix. Therefore I resolved to take out the uterus, and did so at 1:30 P.M. The method I employed proved so successful and seemed so well adapted to her case that I think it worth while to mention it and advise it for cases presenting similar difficulties. After a thorough disinfection of the parts, I introduced suture of juniper catgut around the vaginal fornices so as to make a circle of ligatures. I made a bloodless incision inside of the circle, commencing in front and separating the bladder and the broad ligaments for a short distance at the sides before introducing the posterior sutures, completing the circular incision posteriorly, and opening the peritoneal cavity. Scarcely half an ounce of blood was lost. After opening the cul-de-sac its entire width, a pair of hemostatic forceps was placed on the left sacro-uterine and base of the left broad ligament, and the uterus cut loose on that side as far as the forceps reached. The manœuvre was then repeated on the other side. Then another pair of forceps was placed on each side just above the first, and the tissue severed as high as they extended. A third pair on each side included the Fallopian tubes, and enabled me to cut out the uterus with the loss of less than an ounce of blood except that which had oozed from the diseased cervix. Some iodoform gauze was stuffed in between the forceps. The forceps were removed at the end of twenty-eight hours, with great distress to the patient and followed by a temporary

rise of temperature from 99.4° to 100.4° F. The temperature went down, however, and did not rise that high again until the beginning of the fifth day, when it again went up to 100.4 F, but subsided upon removal of the tampon, which had become offensive. She turned on her side at the beginning of the fourth day. The bowels were moved on the fifth day by a Seidlitz powder. After the removal of the iodoform gauze on the beginning of the fifth day, vaginal douches with a tube for the return flow were used twice a day. After the sixth day they were carbolicized.

Having performed the operation both ways, viz., with and without hemostatic forceps, I feel justified in asserting that ligatures are better for cases in which the size of the vagina and mobility of the uterus allow of their application without too much loss of time, for there is less bruising of the broad ligaments and less sloughing afterwards. They may be left long and used instead of sutures to draw the stumps together over the vaginal opening. For cases in which time is an important element, and the broad ligaments cannot be rapidly ligated, the forceps are preferable. In the hands of the beginner they are safer because they may be applied with less handling and exposure of the peritoneum, and are not liable to be followed by hæmorrhage. Ligation of the vaginal walls before cutting can be done so quickly and easily that it is a desirable procedure in all cases.

The growth, as you see, has extended as high as the internal os, with the main part of it taken off it looks like an epithelioma of the cervix. The uterus is small in size. Sarcoma, originating in the cervix, would seem to be a rare occurrence, and this one case is, as far as I can determine, the thirteenth one recorded. One has been recorded by G. Veit ("Handbuch der Speciellen Pathologie," etc., von Virchow); one by Scanzoni ("Lehrbuch der weiblichen Sexualorgane"); one by Kunert (*Archiv. für Gynäkologie* Bd. VI, p. 113); one by Leopold (*Archiv. f. Gyn.*, Bd. VI, p. 493); one by Grenser (*Archiv. f. Gyn.*, Bd. VI, p. 501); two by Spiegelberg (*Archiv. f. Gyn.*, Bd. XIV, p. 178, and Bd. XV, p. 437); one by Rein (*Archiv. f. Gyn.* Bd. XV, p. 187); one by Winckler (*Archiv. f. Gyn.*, Bd. XXI, p. 309); one by Schwartz (Beerman, Inaug. Diss., Göttingen, 1876); one by Zweifel (*Centralblatt für Gyn.*, 1884); Hunter (*Am. Journal of Obstetrics*, Vol. XVII, p. 523), and this one. Some of these were not primary sarcomas, but were developed secondary to other growths, such as papilloma, fibroma, etc.

Report of Pathologist.—Microscopical Examination of the Cervix.—On the surface the growth presents the structure of papilloma, i. e., villous projections consisting of a connective-tissue stroma covered over completely by several layers of ovoid cells. Upon the surface of these there is a single layer of columnar epithelium. In the specimen this has been stripped off on part of the surface. The columnar epithelium is not as tall and less delicate than that of the normal mucosa.

Normal Mucosa.—At the base of these villi the tissues are considerably altered. They consist largely

of granulation cells. The normal glandular elements have quite disappeared in some parts, in others they are greatly modified; the cells lining the follicles being irregular, ovoid, or spindle-shaped.

Many of the glands are quite replaced by sarcoma corpuscles.

In some points of the specimen there occurs a delicate network of branching cells, presenting the characteristic appearance of myxoma. These portions are considerably softer than the surrounding structure.

Diagnosis.—Papilloma at surface. Myxo-sarcoma at base.

The disease was probably primarily simple papilloma, and is now in the stage of transition to sarcoma. MARIE J. MERGLER.

DR. J. H. ETHERIDGE: I understood Dr. Byford to say that a portion of the growth involved the vagina also, and I would like to ask him if he could follow up the broad ligament well enough to find if there was any involvement of that structure.

DR. BYFORD: I did follow it up and put on the forceps.

DR. ETHERIDGE: I saw a case about two weeks ago that was very interesting and instructive to me. It was the removal of the uterus for cancer of the cervix. Upon examination, at first we thought we could not take it out, but as the whole cervix was involved and it had spread over the sides of the vagina, the left side a very little and considerably upon the right side, it was concluded to go on and do the operation. The operator freed the cervix from the vagina and then commenced the peeling up process, the broad ligaments were exposed, and the forceps put on, and the uterus cut away. In the left broad ligament, throughout its whole extent to the pelvic wall, there were nodular enlargements, showing that the broad ligament itself was involved, and that, too, upon the side in which there was the least encroachment of the vagina; on the right side there was no involvement of the broad ligament. There were eight or nine forceps left in the vagina, which were removed at the end of forty-eight hours without any trouble. She has recovered from the operation nicely. I have often wondered how the broad ligament appeared when infiltrated with cancerous material, and I think now that I know.

If the case Dr. Dudley reported is the one I saw, and he did not speak of one thing, I would like to speak of it, and that was a clever bit of ingenuity on the part of a clever operator in retroflexing the uterus. If I remember rightly, he attempted to push it down and draw it down from beneath without avail, and then, by taking a pair of vulsellum forceps, he grasped the uterus just above the vaginal attachment and drew it down, then took another forceps and drew it down a little more, then another, and so on, and in that way got the uterus down easily; which impresses one who has had trouble in getting the uterus down within reach.

Since the October meeting, at which a paper of mine on this subject was read by title, another case has passed through my hands which I have not reported to this Society. It was a case in which there

was a development of a small fibroid tumor in the posterior uterine wall. All attempts at retroflexing or retroverting the uterus were unavailing, and it had to be removed by detaching the broad ligaments which the uterus turned upward. The patient has gone along without trouble and has made a complete recovery. The uterus was removed for incoercible hæmorrhage. Everything else had been tried, scraping, stimulating applications, ergot, etc., and the operation which was expected to be performed was removal of the ovaries. But as I had had the experience of removing two pairs of ovaries for bleeding fibroids, and they kept on bleeding, I explained to her the difference between removal of the uterus and the ovaries, and she finally accepted removal of the uterus.

I believe one of the greatest advantages of the forceps over the ligature is the superior facility for free drainage. All fluids will run down through the opening in the vagina left by the forceps, in a perfect manner, and there is no danger of the fluids remaining in the peritoneal cavity by the closing of the top of the vagina, which is speedily brought about. After the patient is put to bed, it is but a few hours before we have a closed cavity in which fluids may decompose and septic peritonitis ensue, unless effective drainage, such as the forceps afford, be used. I think that one advantage over the ligature is enough to induce every operator to use the forceps.

DR. JACKSON: It occurred to me, in examining this specimen, that it was not necessary to remove the entire uterus. High amputation of the cervix would have removed all of the disease and would have lessened the danger to the patient.

I want to refer to a point in Dr. Dudley's remarks with reference to the attachment of the sarcoma to the uterus by a pedicle. I desire to ask whether that is a usual method of attachment of a sarcoma? In the cases of uterine sarcoma that I have seen the disease commenced on a flat surface—the attachment was sessile. I once saw a case which I at first supposed was one of sarcoma, but subsequent examination with the microscope determined that it was not a sarcoma, but a degenerated fibrous polypus.

These microscopic examinations of malignant diseases, by the way, are not always reliable; in my own experience I have received three widely differing reports, all made by competent persons, and from the same specimen, so that I must confess I have less confidence in the microscope as a diagnostic instrument than I formerly had. I regret this very much because, in many cases, we depend almost entirely on investigations to determine our diagnosis and treatment.

DR. PARKES: I was exceedingly interested in Dr. Dudley's case, and especially in the manner of securing the broad ligaments by means of forceps. I had the pleasure of witnessing the use of these forceps by the person who first invented them, Péan, of Paris. In 1883 I did the first operation that has come under my care for removal of the uterus per vaginam by this method. In 1886 I did it again, and during the early part of this year I removed three uteri, and in each of them I employed the method that has

been described this evening, the use of the snap forceps in controlling the broad ligaments, instead of ligatures. After listening to a report of similar cases by Dr. Etheridge, I remarked that I did not see why, in this method, the uterus should be retroverted; that so far as my experience went, I found no difficulty, after the division was made in the cul-de-sac of Douglas, in reaching the top of the broad ligaments with my finger, and found no difficulty in severing the attachment, and had no subsequent difficulty from hæmorrhage. I can very well see that occasional cases will be met with where it will be difficult, if not impossible, to reach the top of the broad ligament so as to be sure that every portion is included in the grasp of the forceps, as in Dr. Byford's case, and in another case I saw where the uterus had in its posterior wall a large tumor, and where it was with great difficulty removed. In these instances it may be necessary to reverse the uterus. The objection to reversal is, that it twists the broad ligaments, and we know that any instrument used for pressure acts better the thinner the tissue that is engaged in the forceps.

It is only lately that very much has been said in the journals about the use of forceps instead of ligatures. Within the last two years an article has appeared in the journals by a French gentleman who has reported some forty cases operated upon in this way. The objection that comes to my mind, in the use of these forceps in operation for myomata of the uterus and large size is that, in the cases I have seen, the broad ligament has been carried up with the uterus to such heights above the top of the vaginal wall that no forceps I have seen would embrace all the tissues. Still the plan would be good; abdominal section would enable one to tie the broad ligaments half way down to the uterine arteries, and then the forceps could be used.

DR. E. C. DUDLEY, in closing the discussion, said: Dr. Jackson has asked for my experience relative to the question whether sarcoma is apt to be attached to the uterine wall by a pedicle. Sarcoma of the uterus is too rare to permit any one operator to speak from experience. It is, however, true that sarcoma may be attached to the uterine wall by a broad or narrow pedicle; on the other hand, as Dr. Jackson says, it may be intramural. This tumor had a very short pedicle; the growth filled and distended the entire uterus; there was perhaps a pound of sarcomatous tumor in the uterus at the time of my first operation, three or four weeks before the second.

I have more confidence in the accuracy of pathological observations through the microscope than Dr. Jackson, never having had occasion to question the diagnosis of a pathologist, although, like Dr. Jackson, I have frequently employed two or three microscopists to examine the same specimen independently, but I have always taken care to employ good pathologists, of whom Dr. Wing is one.

The objection of Dr. Parkes against the operation which I have indicated for removing myomata and securing the broad ligaments by means of lock forceps in the vagina would not render the procedure impracticable. The broad ligaments could easily be

stripped from the uterus until it became possible to include them in the grasp of the forceps. For this operation it would be well to have, in addition to the ordinary forceps, four pairs of forceps with very long blades, two of which could be fastened on either broad ligament close to the uterus, and the ligaments could be divided between them, then the ordinary forceps might be passed through the vagina with their blades on either side of the remaining portions of the broad ligaments. After removing the uterus, the entire broad ligament on either side could then be grasped in a single pair of vaginal forceps, which should have longer and stronger blades than for ordinary vaginal hysterectomy, on account of the great hypertrophy of the ligaments.

Dr. Byford considers the method of Péan inferior to that of the ligature for certain cases in vaginal hysterectomy. Péan's method seems to me better and safer for all cases. The hæmostasis can be more quickly secured by the forceps than by the ligature. A single pair of forceps will secure a mass which would require several ligatures. The hæmostasis is almost absolute when secured by the forceps, but is uncertain with the ligature. After the forceps have been left on for forty-eight hours there is necrosis of that portion of the ligaments within their grasp, and we thereby get rid of it. Not so with the ligature mass; it must remain as a slough, sometimes for many days. Moreover, after a ligament is found to be involved in the disease for which the uterus is being removed, it may be easily drawn out by means of the forceps first applied, the surrounding tissues stripped off, and another forceps applied back of the first ones. This would be very difficult, sometimes impossible, with the ligature. The mortality of this operation may perhaps be reduced as low or lower than that of ordinary ovariectomy. It is certainly an easier operation than ovariectomy with adhesions. The hæmostatic forceps have indeed changed a very formidable operation to a very simple one.

Retroverting or inverting the uterus through the opening posterior or anterior to the uterus and bringing the fundus into the vagina is objectionable. First, some of the contents of the uterus may get into the peritoneal cavity and make trouble. Second, the body of the uterus in the vagina fills it so full as to leave very little space in which to complete the operation. It will always be well, however, as a precaution against infection of the abdomen from the malignant disease, to tampon the uterine canal with cotton and close the os externum with a suture, so that if it become necessary to retrovert or anteverte the uterus nothing can get out. Iodoform gauze was used as a vaginal tampon in this case; when removed in twenty-four hours, it was found to be fetid, and therefore seemed rather an element of danger than of safety. It also interfered with drainage. If used at all, it should be placed between the forceps and the vesico-vaginal septum, where it would not be so liable to obstruct drainage as if placed between the forceps and the recto-vaginal wall. It would always seem desirable to close the peritoneal edges of the wound with lock forceps, as was done in this case. They did not close the wound enough to prevent

drainage and they do protect the patient against the danger of protrusion of abdominal viscera in case of severe retching, vomiting, or coughing.

DR. H. T. BYFORD: I cannot agree with the last speaker that iodoform gauze interferes with drainage and favors decomposition. As the vagina cannot well be douched during the first few days, the secretions must accumulate until forced or drawn up through the vaginal entrance, which, in the dorsal decubitus, is the highest end of the vaginal canal. By placing a small roll of iodoform gauze well up against the stumps (drawn down by the ligatures), and then stuffing in a long narrow strip so as to fill the vaginal canal loosely, and extend out to a dry piece of gauze between the labia, we can drain off the fluid portion of the exudations by capillary drainage, promote hæmostasis, prevent prolapse of the intestines, support the base of the bladder, and keep the stumps stationary until an exudate has fixed them and closed the peritoneal cavity.

As to the advantage of the forceps in enabling us to remove more of the broad ligaments, I think that the less of the broad ligament removed the better. If the disease has extended into the ligament, the operation should not be performed. I think that the proposed combination of the abdominal and vaginal methods by the application of the hæmostatic forceps from the vagina is more complicated, more difficult, and more dangerous than supra-vaginal amputation or abdominal hysterectomy. Hæmostasis can be secured without it. In case the cervix must, on account of the disease, be removed with the uterus through the abdomen, then the forceps might be applied from below, but the mortality would, in the nature of the case, be greater than that of vaginal hysterectomy or supra-vaginal amputation.

In answer to the criticism that a high amputation of the cervix would have been preferable, I will say that the cervical wall was so deeply invaded that the cul-de-sac would have necessarily been opened. Had it not been opened, there was not enough vaginal wall to cover the raw surfaces, and the hæmorrhage that would have occurred, and the suppuration afterward, whether the cautery had been applied or not, would have been much more liable to kill this feeble patient than hysterectomy. The septicæmic symptoms disappeared in a day, and the anæmia is daily diminishing. In some cases, vaginal hysterectomy is the safer operation.

DOMESTIC CORRESPONDENCE

A REMEDY FOR TÆNIA.

Dear Sir:—It occasionally happens that one remedy after another fails to expel a tapeworm, even though the patient is placed under proper and restricted diet before the medicine is given. A case of this kind came under my observation—a boy, aged 13 years. The diagnosis, as is usually the case, was very readily made, from the fact that the boy pulled out several joints of the tænia from his anus

as proof of his ability to make the diagnosis. Turpentine, pomegranate bark, pumpkin seed, extract of male fern, and chloroform were given at different times, with the effect of expelling the greater portion of the worm, but they failed to bring away the head. Some of these drugs were given the second, and even the third time.

After failing with the anthelmintics that had been hitherto successful in my hands, I concluded to give salicylic acid (as mentioned in Bartholow's "Materia Medica," 6th ed.). The boy was given 8 gr. doses every hour, until five doses were taken, a dose of castor oil preceding, and one after the last dose of the acid. The result was that the worm was expelled entire with the operation of the oil.

J. F. JENKINS, M.D.

Tecumseh, Mich., March 2, 1888.

NEW INSTRUMENTS.

AN IMPROVED LARYNGEAL TUBE.

*Exhibited and Described to the Chicago Medical Society,
February 20, 1888.*

BY F. E. WAXHAM, M.D.,
OF CHICAGO.

Unexpectedly I found my name upon the programme to-night. I regret it because I did not intend to present these instruments until I had some further experience. My experience with these modified tubes is limited to four cases, which of course are too few to allow me to speak with authority in regard to them. The most earnest advocates of intubation have never claimed that the operation has been fully developed, and it will undoubtedly be years before the instruments are perfect. This new device is the outgrowth of the rubber epiglottis that I have used considerably. The rubber attachment in many cases worked admirably but would often fail, partly due to the disarrangement of the epiglottis on



Largest size tube, shown full size.

introduction, or more frequently, perhaps, to disarrangement afterwards from frequent coughing, so I have long been at work trying to find some way by which we could close the upper opening of the tube without danger of any disarrangement upon introduction or later by the coughing. I have devised this metal epiglottis, that acts by means of a spring made of piano wire, which is embedded in the upper part of the tube. This epiglottis works very lightly indeed. As the child swallows the epiglottis falls and the larynx rises, and this metal attachment covers completely the upper opening of the tube and when the swallowing ceases the spring forces it upward. The only danger I see from this instrument is from the rusting of the wire and its breaking if used too long without

being changed. If made of gold it will not be necessary to change the spring so frequently.¹

My first case was seen in consultation with Dr. Quine. The patient was a little child 4 years old. Several months previously the child had suffered a severe attack of nephritis and had never fully recovered. Four or five weeks ago the child had an attack of scarlet fever; the nephritis was aggravated and the amount of albumin in the urine greatly increased. Following scarlet fever came diphtheria, and the larynx becoming involved it seemed a hopeless case, on account of the complications. To relieve the urgent dyspnoea, the O'Dwyer tube was inserted, but scarcely with the expectation of recovery. During the first thirty-six hours there was almost entire suppression of urine. The child was frantic for water and as every attempt at drinking caused violent coughing it was thought best to remove the tube hoping the child could breathe without it. The tube was removed and a membranous cast about two inches in length was expelled, but it was impossible for the child to breathe without the tube and this modified one was introduced. There was a great contrast between the ability to swallow with this tube and the other. The child died, however, about eight hours later from uræmic poisoning.

The next case was seen in company with Dr. Parsons. This was almost a malignant case of diphtheria. There was albumin in this case also, and it seemed, if possible, more hopeless than the other. There was repugnance to food of any kind; the child would not take nourishment before the tube was introduced, and of course there was the same difficulty afterwards. When she would make the effort she could swallow without difficulty. This child died about thirty-six hours after the operation.

The next case was seen through the courtesy of Dr. Roberts, of Lemont. There was some diphtheritic infection, several children in the family had had sore throats and there had been small spots seen on the tonsils. The child had been suffering urgent dyspnoea for forty-eight hours; I never have seen more urgent dyspnoea than in this case, there was very deep sinking in of the thorax with every inspiration, the pulse was rapid and feeble, and the child could have lived but a few hours longer. This tube was introduced and the child was able to take nourishment very nicely and without coughing, and took liquids comfortably. The child wore the tube forty-eight hours and expelled it, and has made a good recovery.

The next case was seen at Blue Island, through the courtesy of Dr. Kaufman. The child still wears the tube. The child was 5 years old and suffered from urgent dyspnoea, this form of tube was introduced and he was able to swallow water without coughing, but after the tube had been in about half an hour he rejected it, it was reintroduced and he rejected it again. A larger tube was introduced which has been retained ever since. The report is favorable, and as the child has worn the tube this long we shall hope for a recovery in this case.

¹ Since reporting the above Truax & Co. have constructed for me a non-corrosive spring.

I think if we are able to allow a child to take fluids a larger proportion of them will recover. Many children object to semi-solid food and it is difficult to feed them, while they would more readily take liquids which would often agree with them much better. While these tubes may still need some changes I confidently expect that they will answer the purpose.

NECROLOGY.

LEVI HOWARD, M.D.

Levi Howard, M.D., was the son of Deacon Levi Howard and Mary Howard, *nee* Houghton, and was born in Bolton, Mass., in May, 1820, being at his decease nearly 65 years old. His father was a farmer in comfortable circumstances, and the son passed his boyhood and youth upon the farm, receiving a common-school education in his native town, continuing his studies at Worcester and at Bridgton Academy, Me. He then taught school a few terms "on the cape" and in Bolton, afterwards beginning the study of medicine under the direction of his uncle, Dr. Lewis W. Houghton, of Waterford, Me. He attended one course of medical lectures at Bowdoin College, and then entered Dartmouth Medical College, graduating at the latter in 1845.

After graduation he practiced with his uncle, Dr. Houghton, in Waterford for three months. While here he married Miss Lydia J. Hapgood, and soon moved to Still River, Mass., a village of Bolton, and here practiced his profession two years. In 1848, learning that Dr. Francis Kittredge, of Chelmsford, wished to resign his lucrative practice to take up his residence in California, Dr. Howard went to Lowell, where he has ever since resided, enjoying in a marked degree the confidence and esteem of the community, as evidenced by the constant and ever increasing demands for his professional services.

Dr. Howard was a member of the Massachusetts Medical Society, of the North Middlesex Medical Society, was at one time president of the latter, and held all the various offices in its gift, and of the American Medical Association from 1865. During Gov. Talbot's administration he was appointed a trustee of the Blind Asylum at South Boston. Never taking an active part in politics, he yet consented several years ago, yielding to the earnest solicitation of friends, to become a candidate for the office of representative in the State legislature. In so doing, he was in part influenced by the belief that the change would afford him the rest which he needed from the exacting duties of his profession. He was, however, unsuccessful, and, paradoxical as it may seem, his personal popularity and professional ability contributed to his defeat. Many of his personal and political friends neglected to go to the polls, feeling that his election was sure, while others voted against him, fearing that his medical services could not be had when wanted; so that, through the over-confidence of his friends, rather than the strength of the opposition, he failed to

secure the only political office he ever sought. In his religious views he was a Baptist, and while a member of the church, and a firm believer in the doctrines of this denomination, he was never narrowly sectarian. For several years he was a deacon of the Central Baptist Church, gave largely to the erection of its meeting-house, and always contributed liberally to the support of public worship. Two of his sons adopted their father's profession; the elder, George L., a young man of much promise, died before he had completed his studies; the other, Dr. Amasa Howard, has been associated with his father the past two years, meriting and receiving the favor of the community. Besides these, Dr. Howard's only students have been the brothers Dr. Samuel L. Dutton, of Boston, and Dr. Charles Dutton, of Tyngsborough, for both of whom their preceptor always cherished the warmest friendship, and whose success in their chosen profession is most creditable alike to instructor and pupil.

In June, 1884, Dr. Howard, knowing well the nature of the malady fastened upon him, left his practice in charge of his son, and in company with his devoted wife, sailed for Europe, where he spent several months; but it now seems evident that it was too late to secure even a temporary benefit from change of climate and occupation.

Not fluent in speech, his thoughts were always expressed in terse, well chosen language. He never jumped to conclusions, and the diagnosis of every case entrusted to his care was the result of a most minute and careful examination. Before age and disease had impaired his bodily vigor, his very appearance at the bedside of the sick fairly rivalled the efficacy of the contents of the medicine chest, causing many a patient to feel if not to say that his presence "doeth good like a medicine." Another, and by no means the least prominent trait of his character, was his kindness to the poor, and many are they who, without money and without price, have received the benefit of his skill and advice; and when his body shall have been laid in the grave, not they alone but the more fortunate, all classes will join in the benediction contained in the poet's lines:

"How many a poor one's blessing went
With thee beneath the low, green tent
Whose curtain never outward swings."

Dr. Howard leaves a widow, three sons and two daughters. One son, associated with his father, has already been named, one is in his senior year in Harvard College, and the third is studying for the profession of architect. Of the daughters, one is the wife of Prof. J. H. Willoughby, principal of the Middleborough High School, and the other a teacher in London, England.

The death of Dr. Howard makes a void in this community not easy to fill. Fortunate, indeed, will be his successor if he shall win the respect, esteem and confidence bestowed in so large measure upon the honored physician who has gone to his final rest.

GARRETT R. BALDWIN, M.D.

Dr. Garrett R. Baldwin died at his home in the city of Ft. Scott, Kansas, on March 4, 1888, after a prolonged illness, at the age of 47 years. He was born at Saugerties, Ulster Co., New York, on May 13, 1840, his boyhood days being spent in his native village where he attended the common schools. When he was quite young his father moved to Michigan, where Garrett attended the Academy at Tecumysset, and afterwards the literary department of the University of Michigan. In 1857 he commenced the study of medicine with Dr. Wood, of Monroe, Mich., as preceptor, matriculating at the Medical Department University of Michigan, in 1859, and again in 1860. In the fall of 1861 he entered the army, enlisting in the 18th Mich. Vol., served a time as hospital steward until commissioned as assistant surgeon, remaining with his regiment until the war closed. In the fall of 1865 he matriculated at Bellevue Hospital Medical College, graduating the following spring, 1866. During that summer he located at Ft. Scott, Kansas, and commenced the practice of medicine, continuing without interruption until stricken down with his fatal illness. He was noted for faithfulness to his chosen profession, and honored by all who knew him, beloved by his patrons and patients for his kindness and sympathetic nature. He held the position of city physician in 1867 and 1868, county physician in 1868 and 1869; in 1870 he was appointed surgeon for the examination of pensions, president of the board for the same purpose from its organization in 1880, until the present administration made a change. He was an active member of the State, South-East Kansas, and Vice-President of the Bourbon County Medical Society. He represented the State Medical Society at the session of the American Medical Association, held in New Orleans, in 1885, and again at Chicago in 1887. He made several contributions to medical literature, notably a paper on "Continued Fever," read before the Kansas State Medical Society in 1883. In 1867 he was married to Anna E. Johnson, an estimable lady, who, with two sons, survives him. Mankind was beautified by his labors, and the world seemed better because such a man lived.

F. F. D.

JOHN HOMER DIX, M.D.

John Homer Dix, M.D., was the son of John Dix, Surgeon in the U. S. Navy. He was born in Boston, 1813, graduated from Harvard College in the class of 1833. He began the study of medicine with Dr. John Jeffries, receiving his degree of medicine from Jefferson Medical College in Philadelphia, 1836. He became a member of the Massachusetts Society in 1837, making the diseases of the eye and ear a specialty; he commenced practicing in Boston about this time. In 1846 he visited Europe to avail himself of the hospital advantages and became one of Professor von Graefe's pupils. He was a man of laborious study and great self confidence, strict integrity, genial in disposition, kind to the poor, and a great

lover of music. Among his writings (although not numerous) I find a (Boylston) Prize Essay on "Morbid Sensibility of the Retina". He joined the American Medical Association in 1849, and attended meetings in 1864 and 1865. He contributed some valuable works to the literature of his profession. After a successful practice for nearly fifty years, he died at the Isle of Shoals, August 25, 1884, bequeathing in his will a large portion of his estate to charitable institutions. His widow survives him.

M. G. P.

H. C. HOWARD, M.D.

Dr. H. C. Howard, of Akron, O., died April 23, 1887, at his residence, at 45 years of age. Dr. Howard was born in Akron and received his literary education in the city schools. He studied medicine with his father, Dr. E. W. Howard, after which he attended two courses of lectures in Cleveland, O., and then completed his medical education in Bellevue Hospital Medical College, New York City, in 1871, after which he entered into partnership with his father, which continued until the time of his death. His cheerful, happy disposition robbed the sick-room of its gloom. No call was ever made for his services which did not receive his prompt attention. His untiring devotion to his patients was rewarded by a large and lucrative practice.

Dr. Howard was always an earnest student, keeping his library filled with the latest works on surgery and medicine. His judgment was remarkably good, and his convictions firm. As a physician he ranked high among his professional brethren. He was kind, good hearted and genial, and never forgot the calls of charity. His genial, social and good-natured disposition made him many friends. All deeply mourn the loss of a warm friend, a good neighbor, an honorable citizen, and a devoted physician.

MISCELLANEOUS.

AMERICAN PUBLIC HEALTH ASSOCIATION.

THE LOMB PRIZE ESSAYS FOR 1888.—Mr. Henry Lomb, of Rochester, N. Y., offers through the American Public Health Association, two prizes for the current year, on the following subject: "Practical Sanitary and Economic Cooking Adapted to Persons of Moderate and Small Means." First Prize, \$500, Second Prize, \$200; Judges, Prof. Charles A. Lindsley, New Haven, Conn., Prof. George H. Rohé, Baltimore, Md., Prof. Victor C. Vaughan, Ann Arbor, Mich., Mrs. B. H. Richards, Boston, Mass., Miss Emma C. G. Polson, New Haven, Conn. *Conditions*.—The arrangement of the essay will be left to the discretion of the author. They are, however, expected to cover, in the broadest and most specific manner, methods of cooking as well as carefully prepared receipts for three classes,—(1) those of moderate means; (2) those of small means; (3) those who may be called poor. For each of these classes, receipts for three meals a day for several days in succession should be given, each meal to meet the requirements of the body, and to vary as much as possible from day to day. Formulas for at least twelve dinners, to be carried to the place of work, and mostly eaten cold, to be given. Healthfulness, practical arrangement, low cost, and palatableness should be combined considerations. The object of this work is for the information of the housewife, to whose requirements the average cook-book is ill adapted, as well

as to bring her attention to healthful and economic methods and receipts.

All essays written for the above prizes must be in the hands of the Secretary, Dr. Irving A. Watson, Concord, N. H., on or before Sept. 15, 1888. Each essay must bear a motto, and have accompanying it a securely sealed envelope containing the author's name and address, with the same motto upon the outside of the envelope.

After the prize essays have been determined upon, the envelopes bearing the mottoes corresponding to the prize essays will be opened, and the awards made to the persons whose names are found within them. The remaining envelopes, unless the corresponding essays are reclaimed by authors or their representatives within thirty days after publication of the awards, will be destroyed, unopened, by the Secretary.

None of the judges will be allowed to compete for a prize.

The judges will announce the awards at the Annual Meeting of the American Public Health Association, 1888.

It is intended that the above essays shall be essentially American in their character and application, and this will be considered by the judges as an especial merit.

Competition is open to authors of any nationality, but all the papers must be in the English language.

The subjects selected and successful competitors in the past three years are as follows: 1. "Healthy Homes, and Food for the Working Classes," 62 pages, by Prof. V. C. Vaughan, of the University of Michigan; 2. "The Sanitary Conditions and Necessities of School-Houses and School Life," 38 pages, by Dr. D. F. Lincoln, of Boston; 3. "Disinfection and Individual Prophylaxis against Infectious Diseases," 40 pages, by Major G. M. Sternberg, Surgeon U. S. Army; and 4. "The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the Best Means and Appliances for Preventing and Avoiding Them," 19 pages, by Mr. George H. Ireland, of Springfield, Mass.

These may be obtained at the book stores, or of Dr. Irving A. Watson, Secretary, Concord, N. H., at the following rates: Single copies, No. 1, 10 cents; Nos. 2, 3, and 4, 5 cents each. The entire four essays in pamphlet form 25 cents, or in cloth binding at 50 cents or 75 cents, according to style of binding and paper. The desire is to distribute these as widely as possible among the poorer and middle classes.

THE NEXT MEETING OF THE ASSOCIATION OF AMERICAN MEDICAL EDITORS.—The following programme has been arranged for the meeting at Cincinnati, Monday evening preceding the meeting of the American Medical Association, May, 1888:

Meeting called at 8 P. M.

Reading of minutes.

President's Address, William Porter, M. D., of St. Louis.

Report of Committee on Organization, Dr. McMurtry, Chairman, Danville, Ky.

Election of officers for ensuing year.

Extraordinary business.

Questions for consideration:

1. Is the multiplicity of medical journals an advantage to the profession? To be discussed by Drs. Crothers, Hartford; Sim, Memphis; Wile, Conn.; Love, St. Louis; Culbertson, Cincinnati; Cushing, Boston; Coomes, Louisville; and Gray, Chicago.

2. How far do medical journals distributed by drug houses and manufacturers interfere with regular medical journalism? To be discussed by Drs. Reynolds, Louisville; Davis, Chicago; Shoemaker, Philadelphia; Bond, St. Louis; Connor, Detroit; Kiernan, Chicago; Thacker, Cincinnati; and Fulton, St. Paul.

Members are requested to limit their remarks to fifteen minutes, and if possible to ten. The place of meeting will be posted in all the hotels by the local committee. Arrangements can be made at this meeting for a "press dinner" for another evening during the week, but it will be impossible to conclude the business of the Association and have the dinner the same evening.

HEALTH IN MICHIGAN, FEBRUARY, 1888.—For the month of February, 1888, compared with the preceding month the reports indicate that bronchitis, influenza, and measles increased in prevalence.

Compared with the preceding month, the temperature in the

month of February, 1888, was higher, the absolute humidity, the relative humidity, and the night ozone were more, and the day ozone was less.

Compared with the average for the month of February in the nine years, 1879-1887, measles increased, and diphtheria, consumption of lungs, pneumonia, intermittent fever, and scarlet fever were less prevalent in February, 1888.

For the month of February, 1888, compared with the average of corresponding months for the nine years, 1879-1887, the temperature was slightly lower, the absolute humidity was slightly less, the relative humidity was the same, the day and night ozone were considerably less.

Including reports by regular observers and others diphtheria was reported present in Michigan in the month of February, 1888, at 40 places, scarlet fever at 45 places, typhoid fever at 17 places, measles at 30 places, and small-pox at 1 place.

During February a disease variously named as a "common cold," and "epidemic influenza," has been very prevalent. It has affected to an unusual extent the root of the tongue. It has run through families, neighborhoods, and schools. Physicians have sometimes been called, especially when the cold threatened to "settle on the lungs."

AN ERGOT-MILL FOR OBSTETRIC BAGS.—Dr. Loviot, in describing Professor Pajot's obstetric bag in the *Annales de Gynecologie*, notes that it contains an ergot-mill. This instrument resembles a small coffee-mill, bearing, like that familiar domestic instrument, a handle, but in size it is not larger than a pepper-mill, and might work by the same simple mechanism. It may readily be packed in the bag, as it takes up very little room. The practitioner can only rely on freshly pulverized ergot of rye. This mill enables him to powder the ergot on the spot, so that in the hour of need a strong preparation of the drug may be made in the patient's chamber, even in the most remote country districts. In this manner perilous delays caused either by inert liquid preparations of ergot, or by waiting till some fresh tincture or fluid extract is brought to the lying-in room from some distant druggist's shop, are avoided, to the great advantage of the patient and the practitioner.—*British Medical Journal*, March 10, 1888.

SIR HENRY ACKLAND has recently had an eye removed for hæmorrhagic glaucoma. At last accounts he was doing well.

MR. T. B. CURLING, a well-known English surgeon, died at Cannes on March 4, of pulmonary congestion.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MARCH 10, 1888, TO MARCH 16, 1888.

Major G. M. Sternberg, Surgeon, ordered to proceed to Brunswick, Ga., on official business, and upon completion of same will return to his proper station. S. O. 57, A. G. O., March 10, 1888.

First Lieut. Jefferson R. Kean, Asst. Surgeon, relieved from duty at Ft. Sill, Ind. Terr., and ordered for duty at Ft. Robinson, Neb. S. O. 56, A. G. O., March 9, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MARCH 17, 1888.

P. A. Surgeon W. H. Rush, detached from Navy Yard, New York, and to Naval Hospital, Philadelphia, Pa.

P. A. Surgeon J. M. Steele, detached from Naval Hospital, Philadelphia, and to Coast Survey Str. "Bache."

Medical Inspector A. S. Oberly, detached from Navy Yard, Portsmouth, N. H., and wait orders.

Surgeon F. L. Dubois, ordered to the Navy Yard, Portsmouth, N. H.

Asst. Surgeon, James Keeney, ordered to the receiving ship "Minnesota."

P. A. Surgeon C. W. Deane, detached from Marine Rendezvous, San Francisco, and to Coast Survey Str. "McArthur."

Asst. Surgeon E. W. Auzal, detached from Coast Survey Str. "McArthur," and to Marine Rendezvous, San Francisco.

P. A. Surgeon Clement Biddle, ordered to Naval Academy, Annapolis, Md.

THE

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No. 13.

ORIGINAL ARTICLES.

METHODS OF EXAMINATION OF BACTERIA FOR LABORATORY PURPOSES.

Based upon Notes taken in Prof. Koch's Laboratory in Berlin.

BY S. N. NELSON, M.D.

OF BOSTON, MASS.
FUNGUS.

Bacteria are a species of fungi coming under the division of the fission fungi; besides the fission there are two other varieties, the mould and budding fungi.

The mould fungi are divided into *Penicillium*, *Aspergillus* and *Mucor*, being distinguished by the difference in growth of the seed stalk. The base or substratum of all is a mass of anastomosing threads, extending in every direction, forming a mycelium; from this extends the seed stalk.

Penicillium: The seed stalk extends upward like a pencil. It has no male or female members. The oldest spore is always the terminal one, being pushed out by the younger members. The distinguishing characteristic is that the spores grow on branches.

Aspergillus: When the spores of *penicillium* are joined together closely it forms the second variety—*aspergillus*—the spores here growing in masses on a head.

Mucor: Here the spores are enclosed in a capsule, which has a brown or yellow color. If the capsule is shaken it bursts and the spores fall out. The characteristic of this variety is that the spores grow in a head or capsule.

2. Budding fungus: This is the fungus of fermentation, although all do not cause it. It has no mycelium or spore formation, but consists of ovoid cells with budding processes. The spaces seen in the cells are fat cells and vacuoles.

There is a transition form between the mould and budding fungi—the "oidium." This is the fungus of Favus, and is pathogenic of this disease. Morphologically it resembles the budding fungi, having cells and buds, but it grows as a mycelium, a number of longish cells lying on one another.

3. Fission fungi: These are all true spirochaete, or bacteria—the latter being a general name for the whole class. Like the other fungi, they belong to the vegetable kingdom, and increase by the division of the cell and subsequent separation of the parts.

They are different also from the budding fungi, in that the cells are immeasurably smaller.

The most elementary form is the coccus, having a bullet shape, all axes being alike. When lying with no regular arrangement they are simply spoken of as micrococci; if they occur in pairs they are called diplococci, as that of gonorrhoea; if they are found four together, they may or may not be enclosed in a capsule, they are called tetrads; if found in the shape of a cube, four on each face, they are termed sarcinae; if they occur in strings or chains, they are spoken of as streptococcus, as of erysipelas, and if in bunches, like grapes, staphylococcus. The substance binding the cocci together is called the zooglee. The spore formation of cocci has not yet been studied up; fat globules may be mistaken for spores.

The bacilli are rod like forms with a difference in the two dimensions. A characteristic element is their development. One way is by fission. A line is noticed in the middle of the cell, forming a constriction, and finally the two sections fall apart forming two plants. The other way is by spore formation, to be spoken of further on. These bacilli form strings, being joined end to end, and it often happens that we cannot distinguish the different members of the long threads. These threads may run in straight lines or breed upon themselves in any direction. There are many varieties of bacilli; some resemble cocci, but among them will always be found enough rods to fix the variety. This is especially noticed during rapid growth. When the growth is slow one dimension is always longer than the other.

The Spirillum, or third variety of bacteria, is characterized by being curved on its long axis, in different combinations. There is the plain curve or breed, as seen in the comma bacillus of cholera; the true spiral form, more or less resembling a screw, as that of relapsing fever, called an elementary form; and finally a complex form, where the spiral is bent upon itself in different directions. Spore formation in this variety of bacteria is not well known.

Many bacilli have cilia at the ends which in many cases are hard to distinguish. These cilia are the motile organs.

Examination of the Mould and Budding Fungi.—A small bit of the fungus is placed in alcohol, to which a drop or two of ammonia has been added, until it sinks. It is then placed in glycerine and can be easily torn apart and examined under the microscope.

Colors and Staining.—The difference of refraction between an object and the air makes a colorless object visible. When the medium approaches the refractive powers of the object then the object cannot be seen, as is shown when a glass rod is placed in oil of cedar. The experiment is best shown when a row of dishes is taken, the first being empty, the other dishes being filled respectively with water, oil of cedar, and Canada balsam. If now a glass rod or a lot of glass beads is placed in each of these successively it will be seen to grow less and less perceptible to the sight. With a colorless rod we simply get a structure picture, while with a colored rod we have in addition, the color.

Following out the principles here involved we make use of the following stains or dyes to render the bacteria more visible.

Methyl violet or gentian violet: This acts quickly and deeply, but may overstain.

Fuchsin: A red stain, not acting as quickly as gentian violet, but not as likely to overstain.

Methyl blue: This shows the finer structures and does not overstain.

Bismark brown, used mostly for contrast staining: Heat is not needed with this dye and it acts well in water and glycerine.

To prepare the staining solutions: First make a concentrated alcoholic solution, using absolute alcohol; then to some of this alcoholic solution add distilled water until the resulting solution is no longer transparent; generally about six parts of water are needed to one part of the alcoholic solution; filter, and the solution is ready for use. Bismark brown cannot be used in alcoholic solution, a concentrated watery solution must be made.

Cover-glass Preparations.—A platinum needle must be held in the flame of a Bunsen burner or alcohol lamp, in order that it may be thoroughly sterilized, and after it has cooled we remove with it a small quantity of the material to be examined and make as thin a layer as possible on a carefully cleaned cover-glass—the less material used the better. If a second cover-glass is rubbed on the first the layer will be made thinner. The specimens are then to be dried in the air, under cover, and when dry are to be drawn three times through the flame, with the surface containing the specimen uppermost. This serves to coagulate the albumen and thus to fix the bacteria. Care must be taken not to overheat the specimen. They are then ready for the staining, which may be done by dropping some of the watery solution of the stain upon the preparation and allowing it to stand, perhaps using a little heat, or by allowing the specimen to float, specimen side downward, in a dish containing the staining solution—from one to twenty minutes may be required. The preparations are washed in distilled water and if overstained, decolorized. For this purpose alcohol, acetic or the mineral acids are used, generally water and alcohol are sufficient. The clean surface of the cover-glass is then dried and the specimen ready to examine. It may be laid on a slide with a drop of distilled water and then examined with an oil immersion lens. If it is desired to keep the preparation, the specimen is

allowed to dry by allowing the water on the specimen to evaporate, and by means of Canada balsam the cover-glass may be fixed on the slide.

Cultivation of Bacteria.—All utensils to be used are to be first thoroughly sterilized. Test tubes are to be first thoroughly washed and dried; they are then closed up with plugs of cotton wool, so made that they may be easily removed when necessary. The tubes are then to be sterilized under a dry heat, under a temperature of 150° C.,—302° F.,—twenty minutes will be long enough. The heating is generally sufficient when the cotton plugs are slightly tinged yellow. They are then allowed to cool and are ready for use. We have found that this could be done in the oven of a kitchen stove or range. In the same way flasks and other utensils may be made sterile.

Peptone Gelatine.—Take a pound of fresh, lean meat, containing little or no fat, mince it finely, add a little water and allow the mixture to stand over night. The following day the liquid is thoroughly strained and pressed from the meat, water being added to bring the amount up to a litre. Then the following is added:

Peptone sicca.....	10 grams.
Common salt.....	5 "
Gelatine.....	100 "

[Instead of the above 10 grams of Liebig's extract may be used with a litre of water.]

The mixture is then allowed to stand in a flask a quarter of an hour, or until the gelatine is thoroughly softened. Flask is then placed on a water bath and heated to 60° C.,—140° F.,—until the gelatine is entirely dissolved. At the temperature above named coagulation of albumen does not occur. Next add a solution of sodio-carbonate with a pipette till a test shows no acid reaction, and the solution is neutral or perhaps slightly alkaline, many bacteria preferring an alkaline medium; then lightly plug up the neck of the flask with cotton and heat for an hour in a steam kettle at a temperature of 100° C.,—212° F. Being heated and sterilized in constantly rising steam is much better than ordinary boiling, as we can obtain a higher temperature, while in common boiling cold air comes in contact with the flask, thus lowering the temperature. Next test a little of the liquid by filtering. If the filtrate is still cloudy, boil longer; if it is clear, test to see if it still remains alkaline. If not, add more of the sodic carbonate solution and repeat the heating. If filtrate is clear and slightly alkaline, then filter the whole amount through a double layer of filter paper and pour into the already sterilized test tubes. The tubes are filled about a quarter of their depth. This can be easily done by attaching a piece of rubber on the end of the funnel, to which is attached a stop arrangement by which the flow can be controlled. The tubes are plugged immediately after the filling and are then sterilized for three successive days, fifteen minutes at a time. By these repeated sterilizings at this high temperature the germs and spore that are hard to destroy by ordinary heat are killed.

The advantages of gelatine are that it is at one time fluid and at another temperature solid, and is

transparent. The germs will remain at the spot where they fall, while with the fluid stratum which Pasteur uses germs may get to all parts of the substance. To inoculate a tube of gelatine, hold the tube upside down in the left hand and loosen the cotton plug; with the platinum needle which has been sterilized in the flame take up a bit of the material to be examined, remove the plug with fingers of same hand, and plunge the needle into the gelatine, keeping in the middle line as nearly as possible and not going to the bottom of the tube. After withdrawing the needle, replace the plug, label the tube and watch developments. This is the so-called inoculation line—"Stitch-Culture." Gelatine tubes must not be placed in the sun or in a hot place, otherwise they will melt and culture be destroyed, the germs being diffused in the mass.

The different manifestations in growth are to be noticed as the distinguishing points of different germs, such as, superficial and deep growths; liquefaction and non-liquefaction of the gelatine. What relation the growth bears to the inoculation line. If a germ needs much acid from the air the growth is mainly on the surface of the gelatine. It may lie here flat or in a raised clump. The inoculation line may be thickened or have little prominences here and there. With germs that liquefy the gelatine it happens usually that the gelatine is liquefied to an equal depth. It may be slow and evaporation take place and an air space result. It may even occur at the bottom of the gelatine, while the upper part remains solid, or it may occur at different places along the line.

The inoculation streak, "Stitch-Culture." The tubes when cooling are so laid that there is a slanting surface and the streak is made by drawing the platinum needle lightly over the surface. This method is not suitable for bacteria that liquefy gelatine.

Slide cultures are made by pouring liquid gelatine on sterilized slides and then allowing them to cool. The specimen is taken up by the platinum needle which has been heated by the flame and drawn lightly over the surface. This is an excellent method for examining growths, as it can be placed under a microscope. In liquefying gelatine preparatory to making cultures it is best to melt it at as low a temperature as possible, just sufficiently to pour it out of the test tubes.

Plate Cultures.—All utensils to be used must be sterilized before using. Glass plates by dry heat. Glass jars are to be carefully washed and then rinsed out with a solution of corrosive sublimate, 1:1000. (A good formula being about 7 grains to pint of water.) When ready a piece of blotting paper moistened with same solution of sublimate is laid on the bottom and another piece, also moistened, on the inside of the cover; if a hole is cut out of this the contents of the jar may be partially seen. Now take a glass plate and hold it upside down till it is placed on the leveling apparatus, and cover immediately with a glass cover. Gelatine tubes are then heated at about 32° C.,—86–90° F.,—just sufficiently to allow the gelatine to pour but not enough to kill germs. Then remove with sterilized platinum needle the substance desired

and plunge into the liquid gelatine. Repeat this five or six times and thoroughly mix the material in the tube. This is best done not by shaking so that bubbles may form, but rather allow it to flow from end to end. From this tube, labeled O, we inoculate a second tube, I. The two tubes are taken in the left hand, the plug of tube O being also held in this hand, that of tube I by the fingers of the right hand. The previously sterilized platinum needle is first plunged into O and immediately carried into the gelatine of I. Four or five times will be enough, and in the same way inoculate from tube I into tube II, and if O is to be thrown away, if thought to contain too many germs, from tube II to tube III, three plates being generally the number taken.

(Instead of paper labels for numbering the tubes pencils may be obtained that will mark glass and porcelain, made by A. W. Faber.)

When the contents of the tube are thoroughly mixed, the gelatine is then poured upon the plate under cover, commencing with tube O, or tube I, according as it is desired to retain O or not. The gelatine is spread evenly on the plate by means of a sterilized rod or with the edge or lip of the test tube, which has been previously heated, leaving a margin between the edge of the gelatine and that of the glass plate. The plate is then allowed to cool, under cover, and hastened if necessary by resting on ice. On the bottom of a jar already prepared, place a glass bench and on this the plate containing the gelatine. A second bench is placed over this to receive the next plate I or II as the case may be, prepared with the same precautions as the previous plate, the plates being labeled to correspond with the tubes, and so on. Any accidental germs that may get in will grow on the surface, while the others will grow in the depths of the gelatine. When all the plates are in the jar, cover and place away for observation, noting progress from day to day.

If the inoculation has been made from a material where probably more than one germ may be found, we can make our pure culture from the above plate cultures. When the growths on the plate are distinct and have not run together the last plate is the best one for this purpose, we make an inoculation from the growth desired to a gelatine tube, in which way a culture of but one germ is obtained.

The different characteristics of the growth on the plate are to be noticed as distinguishing different germs, just as in the tube cultures.

Agar-Agar.—This has many advantages over gelatine, the principal one being that it does not liquefy at ordinary temperatures. It is prepared in the same way as gelatine. A pound of fresh, lean meat being minced and allowed to stand over night in a litre of water, pressed and strained on the following day, and brought up to a litre by adding water. It is then placed in a clean flask with 10 grams of peptone and 5 grams of common salt and filtered. (As with gelatine, 10 grams Liebig's extract may be used with a litre of water, instead of the minced meat). To the filtrate add 15 grams finely cut agar-agar, and allow whole mass to soak over a water or sand bath at a temperature of 50–60° C.—112–140° F.,—and lastly,

heated directly over the flame. Agar melts slowly and must be heated till it is thoroughly divided. It is then neutralized with solution of carbonate of soda in the same way as gelatine, and then filtered. This is the hardest part and is best done at a temperature of 100°C .— 212°F .—in a steam kettle made high enough to hold the flask and funnel. It is then run into test tubes and sterilized for three successive days, fifteen minutes at a time. It is used for inoculations and cultures in same way as gelatine and is especially suitable for bacteria that liquefy gelatine. It is also good for germs that require high temperature, as in a culture oven or incubator.

Blood Serum.—Some germs, notably the tubercle bacillus, will not grow on either gelatine or agar-agar, and for these blood serum serves excellently for a stratum. Beef or sheep's blood is used, being caught from the animal in sterilized vessels and immediately placed away in the cold to quietly settle for 24–36 hours in order that the serum may form. If shaken or moved the serum becomes tinged with the blood coloring matter. When the serum has formed it is removed by means of a sterilized pipette and poured into test tubes, previously sterilized, which are filled about one-third their length. The tubes cannot be sterilized like gelatine tubes and is best done in an apparatus where they lie in a slanting position at a temperature of 58°C .— 131° — 158°F .—the former being the better, if possible, for one hour, for five or six days. When firm place the serum tubes with their plugs in a culture oven or incubator to see if they are sterile or not. The serum forms an opaque mass and the inoculations are made as streaks along the surface of the serum with a sterilized platinum needle, as with gelatine.

Bread Substratum.—This is used for cultivation of the mould and budding fungi. Small flasks are washed and dried, then plugged with cotton and sterilized with dry heat. They are then partly filled with powdered bread and just enough water added with a pipette to be soaked up. They are then sterilized by dry heat and are ready for use. The inoculations are made from the desired material to the surface of the bread.

Potato Cultures.—The potatoes must be as fresh and perfect as possible in every respect. Bits of earth adhering to the eyes must be cut out and the potatoes carefully cleaned with a brush. They are then to stand an hour in a 1:1000 solution of corrosive sublimate, by which the skin is made sterile. They are then placed in a pot and thoroughly steamed in a steam kettle at 100°C ., being allowed to remain here from a half to three-quarters of an hour. This is sufficient for new potatoes, old ones requiring a longer time. When taken out they are allowed to cool and are then ready to be handled. Before handling, knives are to be heated in the flame and cooled, edge up, under cover; glass jars to be cleaned and rinsed out with a solution of sublimate, 1:1000; hands to be brushed and bathed in same solution. Potato is to be picked up between the thumb and forefinger of the left hand and cut through the middle with a sterilized knife which is not to be removed until the potato is placed in the jar, when the upper

half is to be removed by means of the knife and the finger, turned over and placed in the jar. In this way the cut surfaces of the potato has had nothing in contact with them but the sterilized knife. Do the same with the other potatoes till enough are cut to fill the jar. The jar is covered after each potato is placed in it till the next is ready.

Inoculations are made by taking a bit of material to be examined on the tip of a sterilized knife and spreading it on the surface of the potato, leaving a clear margin around the border. From this a bit is taken out of the centre and spread on the second, from the second to the third, and so on. Precaution must be taken to expose the potato to the air as little as possible. If the potatoes have not been thoroughly cleansed and sterilized, it will show for itself by the growth of the potato bacillus.

Examination of Water and Counting Bacteria.—Up till lately, the examination of water was a chemical one, but it was not reliable, as it could not detect the organic elements, which have no relation to the chemical constituents. Distilled water contains plenty of germs. A good drinking-water should contain as few bacteria as possible; still, many germs are found in the air, which are perfectly harmless. On the whole, one may say that a sample of water containing 100 germs is better than one containing 1,000 germs; still, it may not be, as the 100 may contain pathogenic forms, though of course the possibilities naturally increase with the increase in number of the bacteria in a certain quantity of water. Water should always be examined immediately after removal. The circumstances surrounding any specified water should also be examined. When a well is pumped dry and allowed to fill again, there will always be found a number of bacteria in the water. If there are but 100 germs in a cubic centimetre of water, then we say that water is comparatively pure; absolute purity is almost impossible. In counting germs, a certain definite amount of material is taken with a sterilized pipette and inoculated in a gelatine tube; generally 1 cubic centimetre of water or other substance is taken to 10 cubic centimetres of the gelatine, and a plate culture made with all the precautions mentioned, the jar containing the culture placed away and noted from time to time. When growths develop they may be counted; if the plate has been marked off in squares and subdivisions the counting is rendered easier. If any of the germs liquefy the gelatine, then a new culture must be made on agar-agar.

Spore Formation.—As spores have not been studied up in the case of cocci, the knowledge of spore formation is connected with the study of bacilli. Spores are a special growth in the life of the germ. They will not stain like bacteria. In staining germs it is often found that the middle part stains less deeply than the ends which are colored intensively; this is not the real spore stage, but the one preceding it. First an oval body appears, which will not take color; this is the spore. Then the spore frees itself and leads an independent existence. They vary in shape and position: may be round, oval, and may have their long axis across the bacillus; some bacilli have

the spore in the end, forming a club. The growth of bacilli from spores occurs in different ways. It may grow out from the ends, from the side, or may bulge out broadside. For spore formation there must be a higher temperature than is necessary for the growth of ordinary bacteria. Anthrax spores will grow at 30°-32° Cent., 86°-90° Fah., and in a solid stratum. For staining see under "Double Staining."

Hanging Drop.—Special slides are made for this purpose, they being thicker than usual and the centre being hollowed out about the circumference of a three-cent piece. Slides and cover-glasses are thoroughly cleansed and sterilized. The bouillon used is the same as that used in making peptone gelatine, without the addition of the gelatine, same formula and process used in making it. A drop of this is placed in the middle of a cover-glass and inoculated with a trace of a pure culture by means of a sterilized platinum needle. The cover-glass is then carefully turned over and laid over the spore in the slide and the edges covered with vaseline, to prevent evaporation. The preparation can then be examined under the microscope and the growth observed. It is especially suitable for spore growth.

Double Staining; Gram's Method.—This depends on the fact that aniline colors do not react the same with all bacteria; from some germs the color can be entirely washed out. Bacteria are stained more thoroughly with an aniline water solution in addition to the ordinary coloring matter. The aniline water should be made fresh, gentian violet added and the preparation stained in the ordinary manner. It is then brought into a solution of iodine and iodide of potassium (1 part iodine, 2 parts of K. I. and 100 parts of water); this decolorizes everything but the bacteria. To make the aniline water solution pour aniline oil into a test-tube till it fills the concavity, then add distilled water to two-thirds or three-fourths the length of the tube, then filter; the filtrate will be clear. Add gentian violet till you have a light cloudiness, and shake the test-tube thoroughly.

Let the preparation remain in this solution five to ten minutes, when it is to be brushed through the iodine solution; generally twice will be enough, in time perhaps half a minute; then bring into alcohol, the brown color due to the iodine is then washed out, the bacteria being stained violet. For contrast color use Bismarck brown.

Staining Spores.—The prettiest results are obtained by using double staining, the spores being stained red and the bacilli blue. The best results are obtained with the spores of the anthrax and hay bacilli. Make an ordinary cover-glass preparation, using the material from the hanging drop, draw five or six times through the flame, by which the spores are made more prominent by the bacilli being more or less destroyed; then stain with the aniline water, fuchsin or violet solution, using a little heat if needed. Spores have a firmer capsule than bacteria, hence ordinary staining will not suffice. To make this solution use the following formula: Of the saturated aniline water solution mentioned under Gram's method, 100 ccm.; conc. alcoholic sol. fuchsin or

violet, 11 ccm.; absolute alcohol, 10 ccm. Decolorize with absolute alcohol and acetic acid. As a contrast color use methyl blue.

Tubercle Bacilli.—An alkaline solution makes the staining solution more intense; aniline oil has same effect also.

Ehrlich's method is a solution of fuchsin or gentian violet and aniline water. It is made exactly as the solution for staining spores, using the same formula. A preparation of the suspected sputum is made on a cover-glass in the ordinary way, dried in the air and then drawn three times through the flame, care being taken not to overheat the specimen. The preparation then is placed in the above fuchsin or violet aniline solution for twelve hours, it is then brought into a solution of nitric acid and water, 1 to 10, for some seconds, where it is decolorized; it remains so long as clouds come off the preparation, ordinarily inside a minute being long enough; it must show no yellow shimmer. It is then brought into not less than 60 per cent. alcohol and washed, and for contrast color into methyl blue, is then washed with distilled water. The tubercle bacilli will be stained red, the other germ cells and elements will be stained blue. If violet has been used instead of fuchsin use Bismarck brown for contrast color. Use oil immersion lens and Abbé condenser. The process may be shortened by heating the fuchsin solution. A more rapid and as certain a method is Liehl's modification, the whole process not requiring over ten or fifteen minutes. Instead of aniline water, which must be often renewed, he uses phenol in a 4 per cent solution: Phenol, 4 grams; absolute alcohol, 5 ccm.; water, up to 100 ccm. Then add fuchsin or methyl violet, 1 gram, dissolved in absolute alcohol, 10 ccm.—5ijss. Allow the specimen to remain in this solution, five minutes. Heating will have same result quicker; heat till bubbles come off, may add the solution to the cover-glass preparation of the sputum, which has been made in the ordinary way, and then heat the cover-glass over the flame. It is then brought into a 1 to 10 solution of sulphuric acid and water to be decolorized. Next come in absolute alcohol, rapidly drawn through till the cover-glass has a dirty-yellow color, is then washed with distilled water and stained with methyl blue, or Bismarck brown if violet has been used, for contrast color. Here, as by the preceding method, the tubercle bacilli are red, remaining elements blue. Tubercle bacilli react very slowly to aniline colors; on the other hand, they are hard to decolorize. Care must be taken not to allow the specimen to remain too long in the decolorizing solution, else the tubercle bacilli will be decolorized. In a suspected sputum the parts most likely to contain the bacilli are the little round clumps of material.

Pure Culture of Tubercle Bacilli.—With a platinum needle make an inoculation of the suspected sputa on the blood serum that has been described. As the germs grow, if pure, have a grayish-white layer on the serum; the bacilli grow slowly. To prevent the entrance of other germs, heat the end of the tube, together with the cotton plug; may also place a drop of sublimate on the cap to prevent evaporation.

Place in culture oven or incubator, at a temp. of 35° Cent., 95° Fah. It may be ten days before a growth is noticed.

Staining Cuts of Tissues.—Small pieces of material to be examined are hardened in alcohol, remaining here twenty-four to forty-eight hours at least, when they will have the consistency of soft cork. They are then stuck on pieces of cork by means of glycerin gelatine, made by 1 part gelatine being placed in water till it has swollen to double its volume; it is then placed in 1 part of glycerin and heated over the flame, thus making a mucilage. It is then glued on a cork by this mucilage and again placed in alcohol for further hardening. Cut with a micistome.

Cut is then placed in the ordinary solution, where it spreads and in a few minutes has absorbed the dye, it may be overstained and may sink a little. From five to ten minutes is long enough to leave the cut in the staining solution. It is then washed off with alcohol; clouds come off and cut looks pale and shrunken. The germs and cell nuclei remain stained, the remaining elements being decolorized. It stays in absolute alcohol one or two minutes to remove water, is then cleared up with cedar oil and mounted in Canada balsam.

Cuts may be double stained according to Gram's method. They are placed in a solution of the fuchsine aniline water solution, next in the iodine solution for from one-half to one minute; this renders the cut brittle. It is then placed in alcohol while clouds come off, and next in absolute alcohol to remove the water. For contrast color use Bismarck brown for one or two minutes, place again in absolute alcohol, cedar oil and mounted in Canada balsam.

Germs are found in different parts of the tissues. Anthrax bacilli are found in the liver and lungs, often in clumps.

Tubercle Bacilli in Cuts of Tissue.—Fiehl's method is the best for this purpose. The cuts are placed in the carbol-fuchsine solution for ten minutes, then rapidly in the 1 to 10 sulphuric acid solution, and next in alcohol till clouds have all passed off. For contrast color let it stand in methyl blue for five to ten minutes. Is next placed in absolute alcohol to remove the water, cleared up in cedar oil or bergamot oil and mounted in Canada balsam. They cannot be stained by Gram's method. The bacilli are red, while all else is blue. The bacilli are found in the cells, especially in the giant cells, and are generally in that part of the cell farthest removed from the nucleus; may be found irregularly in the tissues. When cells break down the bacilli are set free.

All sorts of animals are susceptible to the tubercle bacilli. If inoculated in a cutaneous vein, tuberculous affection will develop in fourteen days. A solution containing the bacilli may be injected into the peritoneum, localizing the process there.

Inoculation Experiments.—Use ordinary house mice or white mice. The animal is held by an assistant or is hung in a glass jar which is about six inches deep, covered by a piece of wire gauze. This gauze is raised enough to admit a pair of forceps to seize the mouse's tail; this is drawn out, the animal hanging inside, and held by the thumb and forefinger,

keeping the remaining fingers on the gauze to keep the animal in the jar. Then the hair is clipped away at the base of the tail and a V-like cut made into the skin with a pair of scissors. A lancet is then introduced to make a pocket, and the inoculation made in this pocket. Of course all utensils are thoroughly sterilized. The animal is then dropped back in the jar and watched from day to day.

THREE BAD CASES OF OVARITOMY; TWO DOUBLE, ONE SINGLE.

Read before the Medical Society of the District of Columbia, November 23, 1887.

BY JOSEPH TABER JOHNSON, M.D.,
OF WASHINGTON, D. C.

Case 1.—Mrs. M., white, æt. 51, married and the mother of several children, first noticed an enlargement in the left side of her abdomen four years ago. It grew rapidly and gave her considerable pain. She became an invalid and for the past year was unable to leave her house, and for the last six months was compelled to stop in bed, partly on account of failing strength, and partly on account of the large size of the tumor.

She had been treated to the materia medica mostly, and the entire surface of the abdomen bore evidence of the vigorous and lavish use of iodine. She was sent to me by Dr. Klistine, of Alexandria. The patient's home, however, was at Rappahannock Station, Va., and she was brought to Washington by her son-in-law, Dr. Quackenbush, of Florida. As she was not able to sit up, a section was taken for her in a sleeper, and she bore the journey very well. I had her taken at once to a private room in the Providence Hospital, where she was put to bed and allowed to rest.

Upon examination I found an enormously enlarged abdomen which gave the impression of containing a unilocular cystic tumor, so clear was the wave of fluctuation. I thought it would weigh at least fifty pounds. The weight was so great that the patient found it impossible to lie for any length of time on her back, but rested for the most of the time on her left side in such a position that the bed supported the weight of her burden.

For several weeks the patient had been voiding less urine than normal, some days less than a pint, and that contained albumin. She suffered from nausea, constipation, indigestion, and got little sleep. She was certainly in a bad way, and was rapidly growing worse. Her pulse was rapid, weak and intermittent, and her temperature 99° in the morning and 101° + in the evening. I did not think her case a favorable one and was loth to operate. I had had a series of eighteen ovarian operations without a death, and I was reluctant to spoil my record; but the patient and her son-in-law were anxious to take the chances—if she had any chance, and I agreed to operate if the Consulting Board of the hospital would divide the responsibility with me.

After examination three days later by the Board an exploratory incision was recommended and Mon-

day, November 7, fixed as the time. We feared she would die from the anæsthetic; we had not much choice between chloroform and ether, as both her kidneys and heart seemed equally affected.

Ether was administered by Clover's inhaler, and although she was on the operating table nearly an hour she only took about 2 ounces. That part of tumor above the umbilicus only was fluid. The remainder of the mass was composed of a great number of cysts containing fluid too thick to run through a large trocar, and it became necessary to turn the patient upon her side and actually bale her abdomen out with both hands. The sac, fortunately, had few adhesions. When the running mass was turned out of the abdomen and the pellicle reached it was at once compressed by strong forceps and the tumor cut away. The uterus had projected from it a fibroid growth with a long pedicle about the size of a hen's egg; this was too tempting to leave, and I transfixed its stem, tied it on both sides and cut it off. I then searched for the other ovary, which I found enlarged, flattened and very hard, above the navel, and imbedded in the folds of thinned out broad ligament and parietal peritoneum.

While I was lifting this out Dr. Bulkley, who was standing by the patient's head, reported that she was dead. I heard several other physicians agree with him that it was useless to proceed, but I did proceed deliberately in the removal of the second ovary. I remembered Dr. Gill Wylie's suggestion that hot water in the cavity overcame shock, and as this cavity was sadly in need of the clearing as well as the heating effects of water, I at once poured several pitcherfuls of distilled hot water into the abdomen, and she promptly rallied, her tongue was pulled forward and she had no more trouble. I baled out her abdomen again, closed the wound, applied the dressings and put her to bed. The doctors all looked sorry for me and said of course she would die—but she hasn't died and is doing very well to-day, which is the eighteenth since the operation. She has taken no opium, as she has had no pain. Has had some stimulants and quinine and one purge. Her bowels moved naturally on the seventh day. I was delighted at this, as I had injured an intestine slightly by compressing a fold of it in a pressure forceps applied to a bleeding point in the omentum. I discovered this when I removed the forceps, and had Dr. Cuthbert hold it at least five minutes in his fingers to determine the extent of injury. When everything else was finished I again examined it and decided to drop it back without doing anything, as it was only bruised. No harm has resulted. Her pulse and temperature are now normal. Tumor weighed 54 lbs.

Case 2.—Mrs. Q., æt. 35, Irish, mother of five children and has had several miscarriages, first noticed a tumor five months ago. She was sent to me at Providence Hospital by Dr. Frederick, of this city. Dr. Lincoln saw the case in consultation with Dr. F., and a diagnosis of ovarian tumor was made. Mrs. Q. had been attended by Dr. F. for an attack of pelvic inflammation quite recently, and the last two months the patient had been suffering from peritonitis.

Upon admission to the Hospital I found the abdomen very tender. She was compelled to stay in bed three days from the effects of my examination and took morphine to allay pain. Her pulse ran from 94 to 112, and her temperature remained constantly above 102°. After treating her for about ten days I saw that she was getting no better and I determined to operate as the best way of affording relief. Accordingly, on Monday last I opened the abdomen, and found a general peritonitis everywhere throughout the cavity. It was impossible to separate the peritoneum from the cyst, therefore, after making a slight puncture with the point of a scalpel, I pushed a large trocar through to the peritoneum and cyst wall and let out about a gallon of dirty brownish-black fluid. With my fingers I finally succeeded in separating a little of the peritoneum, and gradually the whole of it was peeled off. The omentum and intestines were also glued to every portion of it where they had contact. The omental adhesions were so general that a large mass of it was withdrawn from the cavity and covered with warm carbolicized towels. Much of this had finally to be cut off to arrest the bleeding. Numerous other points were ligated. There was a general oozing from everywhere in the cavity, and after the removal of the other ovary, which I found to be cystic, I poured into the cavity a number of pitcherfuls of hot water until it came out but slightly reddened. I then put in a drainage-tube and sewed up the wound.

Her pulse is now 70, and temp. 99.4°, being less to-day than before the operation, and I believe the patient will recover. No more fluid coming through the tube, it was removed this morning.

Case 3.—Mrs. H., æt. 67, widow, mother of several children, came to the charity ward of the Providence Hospital about ten days ago. Her abdomen was very large and she had sprung a leak on her way up to the hospital. She had been tapped a week before coming. The puncture had oozed, and for three days she kept the nurses busy changing cloths and beds. She stated that the tumor began to enlarge and to trouble her about two years ago, but thought it had been growing at least six years. When she was first tapped she was much prostrated. She was tapped again in two months, and again in two months. For the past year the tapping has been repeated every two weeks, so that in all she has been tapped thirty-seven times. Nevertheless a bucketful was drawn away, and frequently more, and counting a bucket at 10 quarts, we would have 370 quarts, or 740 pints; so that I could say that she has lost about 800 pounds of fluid within two years.

She applied to a distinguished obstetrician a year ago for a diagnosis and desired an operation, but was told that she had enlargement of the liver and dropsy, and that nothing could be done. The Consulting Board of the hospital advised me to make an exploratory laparotomy with power to act.

Immediately after the operation on case No. 2 just reported, I had her etherized with Clover's inhaler and put on the operating table. The usual incision was made as for ovariotomy, and a cystic growth discovered at once. This was punctured and found to

be multilocular and colloid. Many cysts were opened and a bucketful of fluid finally drained away. The opening had to be enlarged up to the navel, and after much manipulation and traction an immense semi-solid mass was delivered which was estimated to weigh at least 20 lbs. The pedicle was about 4 inches broad, and had to be ligated in four places under the forceps, which had been applied to enable me to cut away the great mass which was so difficult to hold. The cavity was then thoroughly cleansed, the wound was closed with a dozen silk sutures, and the old lady put into bed. She rallied well, and this evening was very bright and feels perfectly certain that she will get well, and is passing wind and water normally. Pulse and temp. under 100.¹

OPERATION FOR GALL-STONES: CONGENITAL ABSENCE OF GALL-BLADDER: DEATH.

BY M. STAMM, M.D.,
OF FREMONT, OHIO.

The following case, although it terminated fatally, still, I think, presents some interest from a pathological as well as surgical standpoint. Congenital absence of the gall-bladder has been found in a few post-mortem cases: no mention, however, has been made, to my knowledge, of the presence of gall-stones in the bile ducts under such circumstances. I also think that no such a case has been operated upon, at least not reported.

Mrs. L., age 63 years, has for the last eight years been suffering from severe paroxysmal pain in the epigastric region, coming on almost regularly after breakfast. About two years ago she called at my office and, as she located the pain over the gall-bladder, and told me that it was at times followed by slight icterus, I made a diagnosis of the presence of gall stones. I prescribed for her with a view to such a condition but, as all medication at the hands of other physicians had hitherto proved without effect, she gave my medicine only a very short trial and, of course, with similar dissatisfaction. About the end of October, 1887, she fell from a chair, striking against her stomach and causing very severe pain over that region, which, however, lessened considerably in a few days. An intense icterus meanwhile made its appearance, combined with severe itching, especially at night, so that it deprived her very much of her sleep. Her appetite was very poor, bowels moved once a day or every other day, stools were grayish-white, resembling putty in color and consistency. Her urine was free from albumen, but rich in biliary coloring matter. (Chloroform test.) Her liver was enlarged, especially the left lobe, but no enlarged gall-bladder could be felt. Her history, however, before the accident, the intense icterus, and a pinching sensation in the region of the gall-bladder made the suspicion of mechanical obstruction by gall-

stones very strong in my mind. As the severe pruritus cutaneous drove the patient almost to distraction, and as she had lost all faith in medicine, she asked me whether an operation might not afford some relief, or at least end her misery in some other way. I told her that we might make an exploratory incision and if feasible we would attempt to remove the gall-stones. Though aware of the dangers of such an operation, the patient eagerly accepted this proposition. The evening before the operation her temperature was 99½, in the morning it was normal.

Operation. Thursday, January 19, 1888.—Patient vomited repeatedly during the administration of ether, also during the operation. I made a T-shaped incision, the transverse cut parallel to and 1½ in. below the ribs, the longitudinal cut externally along the rectus abdominis muscle to a little below the umbilicus. Owing to the large amount of adipose tissue the incision had to be made of such a length. The liver was found enlarged, principally its left lobe. A careful search made for the gall-bladder; it, however, was conspicuous by its absence, and in its place was found a projection of the liver substance, but harder than the surrounding tissue. On pressure I thought I could hear a grating sound. Dr. Caldwell, who was my nearest assistant, independently noticed the same fact. On further examination I also found that this projection contained three solid nodules which suggested the idea of their being either gall-stones or cancer. The introduction of a needle even did not settle the question fully in our minds, and for a moment closure of the abdomen was suggested. After a moment's reflexion, however, we determined to cut down upon these nodules. After I made an incision through about .5 cm. of tissue a few drops of a milky fluid escaped and then I struck a stone 1.5 cm. in size and the shape of a die; after its removal two more were found, of equal size and shape. I succeeded from this place in introducing a steel sound into the common bile duct and found no further obstruction. The stomach and duodenum were adherent to the liver near the venous duct, but I made no attempt to separate the adhesions. Under considerable difficulty the incision was closed by four silk sutures, and, as I was afraid of some oozing of bile or blood, I left some iodoform gauze at the place, after Miculicz's method (tobacco-pouch), as it perhaps might serve to indicate such an event. As four silver sutures broke during the abdominal closure, not at the place of twisting but where they pierced the peritoneum, I became rather partial to braided silk, and think I will use it altogether in the future.

The patient rallied well from the operation, and for the first twenty-four hours did very well, with the exception that she did not pass over two ounces of urine. On the second day, however, vomiting set in which gradually increased in frequency, so that on the third day it became incessant. Although she swallowed nothing but ice pills she vomited up considerable quantities of greenish-black material. Her temperature never exceeded 100°, pulse and heart-action remained very feeble after the operation, the jaundiced condition of her skin and eyes seemed to clear up. Death ensued about sixty hours after the

¹ March 26, 1888.—These three bad cases made good recoveries, and are alive and happy to day. I have now had a series of 24 ovarian operations without a death, the last being done in my private hospital seven weeks ago.

operation. During the whole time the quantity of urine, voided through catheter, did not reach 3 ozs.

Post-mortem examination was performed under protest, which made me resort to the pretence that I would remove the iodoform gauze left in for drainage and secure better closure of the wound, it therefore had to be done in a hurried manner. The abdominal wound looked fresh, peritoneum in some places was already well adherent. The bowels were streaked with a little bloody serum but no coagulation was found, except in the transverse cut between the muscles; it had no connection with the peritoneal cavity since the peritoneum under it was well closed. The liver was considerably enlarged, somewhat pale and yellowish, and the wound made for the removal of the gall-stones was in a very good condition, well agglutinated. There were no signs of bile or blood visible. The adhesions between liver, stomach and duodenum could be easily separated. There was absolutely not a vestige of the gall-bladder to be found. The bile ducts were dilated and patent, also streaked with some biliary fluid. The cavity where the gall-stones were located seemed to empty right into the common duct, its walls were thick, and seemed overlaid with a thick stratum of liver substance. The stomach and duodenum were filled with about half a pint of greenish-black fluid. Spleen was normal but somewhat pale. Right kidney was small and quite brittle, of a grayish-red color. Left kidney of normal size, very pale and showed signs of fatty degeneration. The heart was covered with a layer of fat, its walls were thin and very flabby, the valves were intact. The lungs were very pale, but otherwise normal.

REMARKS.—From the clinical course and the post-mortem appearances of the case I gained the conviction that the death of the patient could not directly be charged to the operation. The fatty condition of the heart and kidneys, with consecutive suppression of urine, were more responsible for it. I think had the case been operated upon a little earlier, or could the real condition have been foreseen, the result would have been much better. The operation lasted over two hours, and the bowels were everted and kept in disinfected cloth during most of this time; this was certainly sufficient to produce a severe shock to a patient whose blood had been poisoned with bile for nearly ten weeks, and the degenerated condition of her heart and kidneys would hardly allow her to rally from it fully. Had I known of a similar case that might have served me as a guide there would have been much less delay in the operation. The novelty of the condition made the diagnosis between gall-stones and cancer also somewhat uncertain, which necessarily prolonged the operation. In other words, I could perform the operation in a similar case in about half the time, which would certainly influence the result very much. As the wound in the liver was well agglutinated and no signs of bile or blood oozing were present, I think the strip of iodoform gauze can be done away with in future. This case further teaches that we should not abstain from an operation even if we cannot detect any tumor or enlargement of the gall-bladder.

SARCOMA OF THE SUPRA-RENAL CAPSULES.

Read before the Medical Society of the District of Columbia, November 23, 1887.

BY I. W. BLACKBURN, M.D.

GOVERNMENT HOSPITAL FOR THE INSANE, WASHINGTON, D. C.

The specimen of tumor that I exhibit was removed, post mortem, from the body of a patient at the Government Hospital for the Insane. The patient was a male, aged 48 years; nativity, Germany; occupation, soldier; mental disease, chronic mania of thirteen years duration. He was at one time violent, but for many years was quiet and did light work in the tin-shop of the institution.

He had for some time suffered from hemorrhoids, and had lost much blood from this source, and he frequently complained of pain in his right side, attributed by himself to "liver complaint;" on account of this pain he wore his clothing very loose. He was anæmic and his skin was yellowish, but not distinctly jaundiced. Death resulted from exhaustion and anæmia.

The body was in a fair state of nutrition; the skin yellowish; slight prominence of the right hypochondriac region.

The brain and its membranes were first examined, but nothing of interest was revealed except slight internal pachymeningitis, and extreme pallor of leptomeninges and brain.

On thoracic and abdominal section the organs were found to be much displaced by a large oval tumor, situated in the right hypochondriac region beneath the right lobe of the liver. The right lung was pushed upward, and the heart and left lung upward and toward the left, and the liver extended downward five inches below the ensiform cartilage, and across into the left hypochondrium.

The tumor was adherent to the liver and to other structures in the vicinity, except a small portion of the anterior surface which was in contact with the abdominal wall and covered with plastic lymph.

By careful dissection the tumor was removed with the liver, and the specimen was photographed to show the relative size. The tumor when removed from the liver weighed $97\frac{1}{4}$ oz., and measured in its long axis $8\frac{3}{8}$ inches; in its short axis $5\frac{7}{8}$ inches. It was completely encapsuled; regular in contour; soft, and fluctuated slightly. It was cut through the middle, and $9\frac{1}{2}$ oz. of blood-tinged fluid escaped. The cut surface showed three concentrically arranged nodules, which bulged slightly from the surface, and were mottled and streaked with blood. They appeared to be more recent than the other parts of the tumor and probably were centres of growth. The greater portion of the tumor was brownish in color and very friable, the result of degenerative change.

The capsule was tough and fibrous, and averaged about $\frac{1}{8}$ inch in thickness. The growth of the tumor had caused great atrophy of the right lobe of the liver, and the right border, where stretched over the tumor, was thinned and fibrous. The left lobe seemed relatively enlarged. The weight of the liver was $65\frac{1}{2}$ oz.; the tissue was bile stained, but

otherwise normal. The gall-bladder contained 155 calculi of various sizes. Some were imbedded in the walls, and to be cut out, and one of the larger was firmly grown into the mouth of the duct, completely obstructing it. The common duct was pervious.

The right kidney was displaced downward and toward the left, and was firmly adherent to the capsuli of the tumor, by a fibrous band. No trace of the supra-renal body could be found, its place having been taken by the tumor. The other organs, including the supra-renal capsuli of the left side, presented nothing worthy of note. No secondary growth was found in any organ.

The macroscopical as well as the microscopical appearances show the tumor to be a sarcoma. Primary sarcoma of the supra-renal body is more common than primary carcinoma; the latter is very rare, but secondary carcinoma is not uncommon. Sarcomata of the supra-renal bodies occasionally reach great size. Wilks and Moxon record a case of sarcoma of both supra-renal capsules, in which the tumors were the size of a foetal head at full term,¹ and a primary melanotic sarcoma the size of an adult head, was seen by Küssmaul.² The tumor I exhibit was fully as large as an adult's head.

Microscopical examination shows the tumor to be of the large-celled round-celled type, with a slight tendency toward alveolar arrangement in some parts. Though the large round cells are most numerous, all shapes and sizes may be seen, and a distinct intercellular reticulum is present. Small bands of spindle-shaped cells and delicate connective tissue run through and divide the cells into imperfect alveoli. Blood-vessels are numerous in the recent portions, and are seen to have imperfect walls. The brownish portion shows degeneration of the cells, but the same general structure. Though no proper glandular structure can be found, the sarcomatous cells have wonderfully preserved the shape and general character of the cells of the supra-renal body. Fields may be found which admirably show this curious tendency of sarcomata, to reproduce the characteristics of the mother-tissue.

MEDICAL PROGRESS.

ESTLANDER'S OPERATION, ON THORACOPLASTY.—MR. A. PEARCE GOULD, in a paper in which he records four cases, says: Thoracoplasty must be clearly distinguished from the much simpler procedure of removal of a small portion of one rib for purposes of drainage. It is, as its name signifies, a "plastic" operation. We are all familiar with cases of empyema which refuse to heal in spite of long-continued free drainage of their cavities. The compressed lung has expanded to the full extent possible to it; the mediastinum has been displaced; the diaphragm has risen, and the chest wall has fallen in

until the ribs are in contact, and yet a cavity remains. To occlude such a cavity by a growth of granulations is impossible, and the patient slowly advances to the grave, worn out by the continued suppuration, or is more suddenly carried off by acute tuberculosis or cerebral abscess. It is to save these lives that Estlander devised this operation, and it should be restricted to such cases, and not undertaken until ample time has been allowed for the natural cure of the empyema to be accomplished—a cure that most often results from a well-devised drainage operation. It is important to emphasize this point, lest the success attending it should tempt the surgeon to perform the operation merely to *save time*. The severity of the operation is such that it is only justifiable when it is plain that it is demanded to *save life*.

As to the operation itself, I need add but few words to the descriptions already given, and these shall have reference to but three or four points. And the first is the necessity for carefully exploring the cavity to be treated either before the operation or as a first step in it. This necessity arises from the fact that the operation must be specially planned for each case, for its success depends upon the whole of the unyielding bony boundary of the cavity being removed. It is not a matter of removing a certain length of a certain number of ribs, but all the ribs lying in the wall of the empyema must be excised. The surgeon should therefore first of all determine the vertical and the antero-posterior extent of the cavity. The best way of doing this is by the finger, and I prefer, first of all, to enlarge the fistulous opening until the finger can be freely passed in to explore the cavity; but of course much information can be obtained by intelligent probing. The ribs to be removed have generally been exposed by raising a flap of the soft parts over them, and Mr. Godlee in his valuable Brompton Lectures advocates that plan. I have not found this necessary; a single vertical incision is all that is required. Raising a flap makes a more extensive wound; but another and perhaps more grave objection to it is that it is often impossible to decide before hand exactly how far the cavity extends in all directions, and therefore how large the flap should be. I strongly recommend a single vertical excision through the skin and muscles in preference to raising a flap. To excise a rib, the periosteum should be separated all round by a respiratory, and if a long length has to be removed, it is best to cut it away in two or even three pieces. If the cavity extends far back toward the spine, it will be found convenient, after removing the front portion of the rib in the usual way, to remove the posterior part from the inside, peeling the thickened pleura off the bone, and applying the cutting forceps from within the chest; this simplifies the operation, and disturbs the soft parts less than the other plan. Should the cavity reach high up, the second rib may be safely removed; but of course the first rib must not be touched owing to its close relation with the subclavian vessels. I would here again lay stress upon the necessity of carefully removing *all* the bone in the outer wall of

¹International Encyclopedia of Surgery, vol. v, page 1057.

²Cornil and Ranvier, page 601.

the empyemic cavity, so that only a soft and easily collapsing wall of soft tissues is left. And not only must the bone be fully removed. Lining the ribs, in these cases, dense cicatricial tissue, half an inch or an inch in thickness, is found, which is almost as unyielding as bone; it, too, must entirely be cut away with scissors. The hæmorrhage attending the operation may be considerable. If care is taken in peeling off the pericostal membrane, the intercostal vessels should escape injury; but many branches are cut, and they bleed freely. If any arteries spurt, they should be sized in compression forceps. For the rest, it is best to complete the operation as quickly as possible, and then thoroughly irrigate with a weak corrosive sublimate solution. The skin wound should be closed with sutures, and, if necessary, drainage may be secured by means of a special incision. Thoracoplasty is a much more severe operation than the mere drainage of an empyema; the shock produced is considerable, and great care is necessary in the after-treatment. Not all cases of chronic fistulous empyema are to be treated by thoracoplasty, for its danger to life must negative it when there is serious visceral disease and the vital powers are at a very low ebb.

The results of the operation may be either partial or complete success. In some cases a sinus remains behind; but this is a much smaller surface than previously suppurated, and the condition of the patient is to that extent improved. Such a result, however, cannot be called very satisfactory; it is, I believe, due to the operation not having been sufficiently complete, some part of the bounding wall of the cavity having been left rigid and unyielding. I believe full success is only to be anticipated where all physical obstacles to the entire obliteration of the cavity have been removed. The cases of complete success will become more frequent as the operation is more completely executed. Such patients have a great deformity of the chest, but the cessation of all discharge is quickly followed by great improvement in the general health. It is to be hoped that the cases requiring thoracoplasty will become fewer and fewer as the surgical treatment of empyema is resorted to more early and is more efficiently carried out. But for a small residue of very chronic and otherwise incurable cases of fistulous empyema, Estlander's operation, when very thoroughly carried out, offers a good chance of cure. When once the necessity for operation is recognized, the sooner it is carried out the better, for marked exhaustion or serious visceral disease renders the operation too dangerous to be recommended.—*Lancet*, Feb. 11, 1888.

WOUNDS OF THE HEAD.—S. GINGER discusses the cases of traumatism of the head treated in the clinic of Czerny from 1877 to 1884, inclusive. There were ninety cases of wounds of the soft parts. The treatment consisted in shaving the head, cleansing with alcohol or turpentine, followed by washing with 2 per cent. to 5 per cent. solution of carbolic acid, or a 1 per cent. solution of sublimate. The wound was then sutured with silk or catgut. In

severe cases a drain or two was inserted. Iodoform was then dusted on the wound and a Lister dressing applied. It is noted of forty-eight incised wounds thirty-three united by primary union. Of six wounds with large scalp flaps, two healed primarily. In favorable cases recovery from these wounds was completed in four to eight days. If the secretions of the wound were profuse the Lister dressing was discarded and open treatment with salicylic solution or 2 per cent. acetate of aluminum was adopted. Erysipelas delayed recovery in six cases, proving fatal in one. In twenty-three cases of fractures of the bones of the cranium, the parietal, frontal, and temporal regions in the order named were the seat of traumatism. The patients were brought to the hospital in a state of unconsciousness which lasted a variable length of time. In lesions of the brain substance an approximate localization is possible in most cases.

The brain and meninges are favorable seats for the development of various forms of inflammation (meningitis, encephalitis, pyæmia), and after years an apparent recovery may be complicated by the development of a series of symptoms due to brain abscess. Such abscesses are fatal in the majority of cases. Neuroses and psychoses may develop and the more so if the local lesion in the brain takes the form of trauma of a centre with formation of a cicatricial tissue. Frequent congestions, intolerance of alcoholics, localized headaches, dizziness, paræsthesias, functional disturbance of the senses, all forebode such complication of a beginning psychosis. In extensive disturbance of the brain substance and large extravasation, deep coma and complete absence of reaction was present. There was also a reactionless pupil, irregular frequent pulse, increased temperature, shallow frequent respiration, in some cases of Cheyne-Stokes' character; death occurred in these cases from cardiac failure of œdema of the lung. The treatment was a strictly antiseptic one, and narcotics, etc., were used symptomatically, but it is to be remarked that where trephining was necessary this was carried out with the mallet, chisel, knife and scissors, seldom with the trephine. In addition to trephining for splintered fractures, abscess and depressions, the indications laid down by von Bergmann and Wiesmann are recognized in this clinic. In fourteen cases of trephining recovery resulted in nine cases. In those cases which proved fatal after trephining the fatal issue was due rather to the severity of the injury. The operation rather retarded the fatal issue. Most favorable and rapid was the recovery of those fractures where the brain substance remained uncompromised. The less the extent of the bony lesion the more rapid and complete the recovery. Where the motor centres were affected by the traumatism, functional nervous disturbances resulted which may, after a period, have retrogressed. The prognosis is best in the first class of cases, and reserved where the brain substance, but not the motor centres were affected. In children especially a certain reserve in prognosis should be the rule, for here, though extensive lesions may end in immediate recovery, yet the statistics show that

such patients in later life form a prominent quota of those suffering psychoses. In compound fractures of the skull, therefore, lesions of the absolute cortical centres give a more unfavorable prognosis than lesions of the relative cortical centres. If paralysis has not improved after five or six months after compound fractures of the skull, they may be considered permanent. In all extensive compound fractures the possibility of abscess must be considered. In all injuries of the head, moreover, where the brain substance is injured, psychoses and neuroses may develop subsequently. Strict antiseptics should be followed in all these cases. Author records twelve cases of fractures at the base of the skull; three proved fatal. The prognosis is favorable in those cases where the brain symptoms are slight and short in duration. The most frequent disturbances of hearing and vision improve if the tympanum alone has been ruptured and the labyrinth in the one case and the optic nerve in the other have not been compromised. Paralysis are permanent which do not recur to the normal condition or show signs of improvement within a few months. The possibilities of subsequent brain abscess or psychoses must be considered. The frequent douching of the nose and ears with antiseptic solutions is imperative. The antiseptic tamponade of the ear is advocated. In obscure concussions of the brain (Beck) where the lesion of the brain substance is slight capillary apoplexia and absorbable exudate, the prognosis is good as regards the immediate recovery of the patient. It is a guarded prognosis, however, when future psychical complications are in question.—*Deutsch. Zeitsch. f. Chir.*, Bd. xxvi, Hft. 3 and 4.

SURGICAL TREATMENT OF DEEP-SEATED PERIRECTAL ABSCESS.—In Professor Bruns' *Beiträge zur Klin. Chir.*, Band iii., Heft 2, DR. HEINRICH ZELLER, of Tübingen, argues that perineal incision is the most rational and the proper method of opening a perirectal abscess situated above the levatores ani and coccygei muscles, and presenting a prominence and fluctuation within the rectum without forming any appreciable projection on the surface of the perineum. The perineal has, it is urged, many advantages over the rectal incision. The former permits a strict application of the antiseptic method, which, if the abscess be opened by the rectum, must be practiced under very unfavorable conditions. In the perineal incision the abscess is opened at its deepest part, and so a free and ready discharge of the pus is favored. The opening in the perineum can always be made to a sufficient extent, whilst when made in the rectum it will necessarily be limited on account of the risk of bleeding, and therefore is liable to be insufficient for the purpose of draining the abscess. The perineal incision guards against further rupture of the abscess in other directions, and should an urethro-perineal fistula be formed, this can be more easily dealt with than an urethro rectal fistula. Moreover, the perineal incision has the important advantage of preventing a communication between the abscess and the interior of the intestine. In this contribution

reference is made to seven previously recorded cases of perineal incision of deep perirectal abscess, and reports are given of three recent instances of similar treatment in the practice of Professor Bruns. In those ten cases the patients all recovered. In four cases urethro-perineal fistula had formed in consequence of rupture of the abscess into the urethra before the perineal incision had been made. In each of these instances the fistula retarded the healing of the abscess, but at last was completely closed. In not a single case was the incision into the perineum followed by rupture of the abscess in any other direction. Of the subjects of thirteen collected cases in which the deep abscess was opened by the rectum, two died—one from purulent infection, the other from perforative peritonitis. The perineal incision has been made in some cases in the middle line of the perineum or in a line parallel to this; in others, in the line of the incision for lateral lithotomy; but, as a rule, its situation should correspond with that of the abscess. After the skin has been divided, the surgeon should make his way to the abscess more by the use of blunt instruments than of the knife, and every bleeding vessel must be secured. The depth of the wound, when the abscess has been reached, varies very much in different cases. In each of the three cases reported by the author it was about four inches; in some cases, especially when the abscess has descended, it is much less. If the diaphragm of the pelvis formed by the levatores ani and the coccygei has not been perforated, the surgeon must work to a depth of at least one inch and a quarter. If the abscess be large, it will usually be opened without any difficulty. If the incision be made at an early stage, and when the collection is small, the operation may be facilitated by the introduction of the forefinger of the surgeon's left hand into the rectum, so as to press down the abscess towards the surface of the perineum, care being taken not to carry the knife too near to the gut. The relative position of the urethra to the abscess may be indicated by passing a catheter. After the discharge of the purulent contents, the surgeon should pass his finger into the cavity of the abscess, in order to search for any secondary cavities or prolongations. The cavity should then be washed out with some antiseptic fluid, and, after the introduction of a drain-tube, the seat of the operation should be carefully covered by a dressing of iodoform gauze.—*London Medical Recorder*, Feb. 20, 1888.

TREATMENT OF DIPHTHERIA.—An elaborate paper on the management of diphtheria by DR. G. GUELPA, is concluded in the issue of October 30, of *Bulletin Gén. de Thérap.* The special point brought forward by the author is "irrigation, the most frequent possible." He has employed a solution of the perchloride of iron for this purpose, chiefly from habit, but other solutions—of lime, carbolic acid, and boric acid—may, he admits, be quite as efficient—may be more efficient—for the agent used is quite secondary, the main consideration being the frequent irrigation. Dr. Guelpa advocates the early and persistent, and

almost continuous application to the parts threatened with an extension of the diphtheritic process.

Cauterizations are negative. Perchloride of iron solutions, 5 to 10 per 1000 in strength, have proved most successful in a long series of cases of different periods. The irrigations are practiced every quarter of an hour during the day, and every half hour at night, in the milder cases with moderate force through the fauces and nares, as is done with the nasal douche; but when the resistance to the passage of the fluid requires it, the hand-ball should be used to pump the fluid through. When irrigation is practiced early and efficiently, it is comparatively rare to find the disease spreading to neighboring parts. It is relatively easy to bear by the patient, and to apply by the attendants.

As Dr. Guelpa submits many cases illustrating the utility of the method, there can be little doubt of its value. There are no difficulties in the way. As it is the irrigation rather than the character of the medicament that determines the result, the practitioner has a wide choice of materials, and, hence, those objecting to the disagreeable iron chloride, can employ other medicaments. Probably, those agents, having a solvent action, as papain, lactic acid, lime, etc., can be used with the expectation of the best results. *It is the early, frequent, and copious irrigation that accomplishes the important curative results obtained by Dr. Guelpa's method.*—*American Journal of the Medical Sciences*, January, 1888.

INFLUENCE OF OBESITY IN YOUNG WOMEN UPON THE MENSTRUAL AND REPRODUCTIVE FUNCTIONS.—In a paper on this subject Dr. ANDREW F. CURRIER says: It is somewhat surprising that the law which evidently obtains in this matter has been so generally overlooked by modern and contemporary observers; at least I have found very little reference to it in recent literature. That law may be formulated in the following terms:

1. A woman under 30 years of age who bears four, five, six, or more children in rapid succession and suckles them, prematurely reaches the limit of her physical powers as a reproductive animal, the phenomena of the climacteric supervening. This applies to the average woman under present conditions of civilization, and, in a marked degree, to those who become obese after so frequent pregnancies.

2. A woman under 30 years of age who becomes obese, from whatever cause, will, as a result, be subject to amenorrhœa, or oligomenorrhœa (a term which I have proposed as a synonym for scanty menstruation) and usually to dysmenorrhœa, though menstruation may previously have been nearly or quite painless. If such patients be married sterility will be the rule. This law, like most other laws, has more or fewer exceptions, but observation and reflection during a not inconsiderable experience have convinced me of its existence.

The prognosis in many of these cases may be considered exceedingly good, excluding, of course, those in which the climacteric has followed extraordinary fruitfulness. For the latter the condition of sterility is permanent, and I doubt whether any sys-

tem of treatment could change it. It is the order of nature. For the others a properly regulated diet is of primary importance, hydrocarbons being eschewed in favor of albuminoids. Alcohol in any form is contraindicated. Suitable exercise must be insisted upon, either by the performance of the active duties of household life or a suitably arranged course of gymnastics, including *massage*. Worthington recommends the systematic use of the waters of Vichy, Marienbad, Carlsbad, or Ems. I am profoundly impressed with the value of electricity for this condition both in the form of general faradization and the intrauterine use of the faradic current. Not only will the muscular tone of the uterus be improved by this means, but the entire pelvic circulation will be favorably affected. I have seen some cases which seemed to be benefited by the use of astringents and stimulants to the interior of the uterus, also by moderate dilatation, but the same means have also been successful in exciting violent inflammation, which leads me to be cautious in recommending them.

The systematic use of laxatives will be required in almost every case, and we should look well to the condition of the heart, using suitable tonics as they are indicated. The internal use of iodide and its compounds has not been attended with the success which its early advocates would lead one to expect. Worthington approves highly of hydrotherapy, especially sea-bathing. Warm baths are, of course, to be avoided. As Worthington has suggested, it is not improbable that one who succeeds in relieving a patient of her obesity will, at the same time, cure her sterility, even without intrauterine medication, and this opinion is shared by Roubaud.—*Medical News*, Feb. 18, 1888.

ERYTHROPHLEIN.—This African product has been the subject of a lively debate in the Berliner Medicinische Gesellschaft (*Berliner Klin. Wochenschrift*, 1888, March 5, also February 27). Dr. LEWIN asserted that it possessed a local anæsthetic action far stronger than that of cocaine. Professor Liebreich replied that the sample examined by Dr. Lewin was in reality a snake poison, and that the rosy red coloration produced by evaporation with sulphuric acid is shown also by snake poison, and even by dried egg or serum-albumen. Dr. Schöler read a paper at the last meeting of the above Society, in which he confirms Lewin's results. An erythrophlein solution of $\frac{1}{2}$ per cent. strength, when dropped into the eye gave rise to a good deal of irritation at first, but perfect insensibility of the cornea ensued in about twenty minutes (or half an hour). The pupil was not affected and intra-ocular pressure was lowered, but a slight degree of hyperæmia of the conjunctiva persisted for a long time, and the subject of experiment complained of a feeling of weight in the upper lid, a sensation as of a veil before the eyes, and of interference phenomena—for example, colored rings. On the other hand, Dr. Loewenhardt, of Breslau, writes in the *Berliner Klin. Wochenschrift*, (March 5), to the effect that he obtained no anæsthesia, but a considerable degree of hyperæsthesia, after subcutane-

ous injection in animals, and found that he could easily produce sloughing. Dr. Epstein, of Nürnberg, in an original communication to the *Centralbl. f. Klin. Med.* (March 3), finds that erythrophlein has only a slight local anæsthetic action when subcutaneously injected, and that a good deal of pain is caused by it. So far then this last observer is opposed to Dr. Lewin, who said in his communications to the Berliner Med. Gesellschaft that erythrophlein had a marvellous power of producing anæsthesia. The difference of opinion evolved by this statement has had the effect of bringing a number of experiments upon the field of action and no doubt precise results will soon be afforded from uniform samples of erythrophlein.—*British Medical Journal*, March 10, 1888.

ACUTE IDIOPATHIC MYOSITIS.—DR. E. WALTHER, gives a collection of cases of acute suppurative myositis (idiopathic) and a consideration of the pathology of the affection. He classes it among the severer inflammatory affections, peritonitis, osteomyelitis acuta spontanea, pseudo-erysipel. It is a disease of mycotic origin, and, as investigations of Rosenbach show, is due to the agency of the staphylococcus aureus and albus, and streptococci pyogenes. The avenue of penetration of the infectious element into the muscle is not clear in all cases, but there are conditions as severe muscular exertion, contusions, etc., which predispose these structures to the reception of these micro-organisms. Dull, severe, increasing pain, inability to use the affected muscle, swelling of the muscle and extreme tension are among the principal symptoms. One or many abscesses may form. The prognosis differs, in some cases threatening the life of the patient. Of nineteen cases collated eight ended fatally. If the patient recovers and the abscess has not been large the use of the affected muscle is gradually recovered. The most frequent complications were erysipelas and tuberculosis of the lung. The author brings forward nothing new as to pathology of the affection, quoting largely from Rosenbach. The treatment is an antiseptic treatment of suppurating areas.—*Zeitschr. f. Chir.*, Bd. xxv, Hft. 3—*Annals of Surgery*, March, 1888.

COLD OF THE HEART.—LUTON says that a gorged condition of the heart is the salient symptom of an impression *a frigore*, which is manifested anatomically by inflammatory and plastic lesions. The clinical symptoms are painful spots over the chest, precordial anxiety, a sense of constriction, and a dry, fatiguing cough. The sequel of this condition is a muco-purulent catarrh of the bronchial tubes, which corresponds to the crisis of this indefinite ailment, which is then called a "cold." The effect of digitalis in aborting these attacks before they have reached this stage, shows clearly that the cardiac muscle is at fault.—*London Medical Recorder*, Feb. 20, 1888.

LAPAROTOMY FOR INTESTINAL OBSTRUCTION DUE TO GALL-STONE.—MR. CHARLES STONHAM has

recently performed laparotomy in a case of intestinal obstruction, and found a gall-stone firmly impacted in the ileum, about twenty inches above the ileo-cæcal valve. The stone was removed by a longitudinal incision about one inch in length, and the wound closed with a double row of fine silk sutures. There was recent peritonitis of the gut above the stone, but none below. The patient, a lady aged 66, who was very prostrate at the time of the operation, died fifteen hours later. Symptoms of obstruction had lasted forty-eight hours.—*Lancet*, Feb. 11, 1888.

PERCHLORIDE OF IRON.—To prepare a reliable soluble saccharide of iron M. TRAUB recommends the following process: Dissolve 100 grammes of perchloride of iron in 500 grammes of water. In another vessel dissolve 85 grammes of bicarbonate of sodium in 500 grammes of water. Mix the solutions, collect and dry the precipitate, which is then ground down with 100 grammes of powdered sugar, previously mixed with $1\frac{1}{2}$ grammes of caustic soda dissolved in three grammes of water. The mixture is dried in a stove and powdered.—*London Medical Recorder*, Feb. 20, 1888.

ACTION OF BOILING WATER ON TYPHOID BACILLI.—WILCHUR, of St. Petersburg, has found that when a volume of boiling water equal to that of a gelatine culture of typhoid bacilli is used on the culture the bacilli are only partly destroyed, and that when the volume of water is double that of the culture all the bacilli are killed. Experiments on the dejecta of typhoid patients showed that when four times the volume of water was added to the dejecta, the bacilli were invariably destroyed. It seems, then, that this is an easy and certain method of disinfecting typhoid stools.

SALICYLATE OF MAGNESIUM IN TYPHOID FEVER.—HUCHARD says that this salt is easily prepared by dissolving salicylic acid in distilled water, and saturating the boiling solution with carbonate of magnesium, when the salt forms in colorless and odorless crystalline needles, readily soluble in water and alcohol. Huchard gives the salt in doses of gr. 40 to 80 a day. It is not contraindicated by diarrhoea, since even in large doses it is but slightly laxative. It seems to act as an antipyretic and as an intestinal antiseptic.—*Rev. Gén. de Clin. et de Thérap.*, Jan. 26, 1888.

MARSON'S NEW TEST FOR SUGAR IN URINE.—Dissolve 10 centigrammes of pure ferrous sulphate in 8 cubic centimètres of urine by the aid of warmth; add 25 centigrammes of caustic potash, and boil. A dark green precipitate forms if sugar be present, and the supernatant liquid is reddish brown or black, according to the amount of sugar. When sugar is absent, the precipitate is greenish-brown in color, and the liquid is colorless.—*London Medical Recorder*, Feb. 20, 1888.

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OPERATION FOR ABSCESS OF THE SPLEEN.

It is seldom that affections of the spleen come into the hands of the surgeon, and on this account, as well as its somewhat remarkable character, a case of abscess of the spleen, operated on by DR. CARL LAUENSTEIN, of Hamburg, and reported in the *Deutsche medizinische Wochenschrift*, No. 51, 1887, is very interesting, and so far as we can ascertain no similar case has been reported in medical literature.

The patient operated on was a coppersmith, 23 years of age, who was admitted to the medical wards of the Seaman's Hospital of Hamburg on September 17, with a diagnosis of typhoid fever, after he had been sick 14 days. He was in a febrile condition, pulse 96, tongue red at the edges and white in the middle, had been suffering with diarrhoea, and the abdomen was somewhat tympanitic. Splenic dulness was much increased, extending in the axillary line from the lower border of the fifth rib forwards and downwards to the free border of the ribs, and backwards to within a finger's breadth of the spinal column. From the middle line forwards it encroached upon the region of normal cardiac dulness, and over the somewhat enlarged dull region of the left lobe of the liver. The spleen was not palpable through the abdominal wall, since the patient did not use the diaphragm in respiration, and during inspiration there was some retraction of the epigastric region instead of abdominal expansion. The patient complained of pain in the splenic region, though there was no sensitiveness on pressure. There was no pulmonary abnormality, except an unusually high posi-

tion of the diaphragm on the left side, and some friction sounds at the boundary of the base of the left lung.

Under a fluid diet, wine and hydrochloric acid internally, and the pack externally the patient's condition was not materially changed. The temperature fell in the morning, and in the evening rose to 39° C. Three days after entering the hospital the patient had a severe chill, with a rise in temperature to 40° C., very small pulse, 128, and cyanotic lips. He then complained of increased pain in the splenic region, the dulness of which was not increased forwards and downwards, but above and behind was markedly increased. The dulness reached two fingers' breadth above the angle of the scapula, and had an extent of 35 by 18 cm. With the exception of the fixed condition of the diaphragm, and the marked friction sound at the lower border of the left lung, there was no abnormal condition of the thorax. On the day after the chill there was severe collapse, with a fall of temperature to 35.4°, small pulse of 72, and coldness of the extremities, from which the patient was aroused only by the use of stimulants and heat. As the pain in the splenic region continued after the chill, Lauenstein concluded that there was a purulent collection in the spleen, and on the fifth day after the patient entered the hospital he operated.

After the patient was anesthetized the needle of the Dieulafoy's aspirator was inserted in the eighth interspace in the axillary line, at the point of spontaneous pain, and about the middle of the anterior portion of splenic dulness. The needle was pushed perpendicularly downwards about two fingers' breadth, but no fluid was obtained till it was carefully withdrawn about 2 cm., when a small quantity of chocolate-colored fluid escaped, which had a penetrating foetid odor. The needle was kept in place and, in order to empty the abscess thoroughly, about 10 cm. of the ninth rib were resected, this rib being selected in order to avoid wounding the pleura. In order to avoid hemorrhage the *thermo-cautery* was used to cut down under the resected rib, and parallel to it. Though the spleen was lying close to the diaphragm it was not adherent to it at the point of incision. After the cautery was carried down about 2 cm. into the spleen a chocolate-colored fluid welled up by the side of the cautery. The incision in the spleen was now widened to the extent of the resection of the rib, and the borders of this incision brought up against and fixed to the wall of the thorax by means of hooks.

The finger introduced into the wound showed the presence of a cavity, about as large as a goose egg,

the walls of which were friable, and in which several loose fragments of tissue were found, that were removed with forceps. The cavity was washed out with cold salicylic acid solution, and then tamponed with iodoform gauze; the whole wound was then covered with an antiseptic dressing. Microscopic examination of the pus showed that it was composed of pus-cells mixed with some red corpuscles, fatty acid crystals, and hæmatoidin crystals. It was impossible to find either pus cocci or typhoid bacilli in dried preparations of the pus. The dressing was renewed on the fifth day after the operation, when it was seen that the spleen was adherent to the thoracic wall and to the diaphragm. Splenic dulness was at this time much lessened. For several days after the operation the temperature was about normal, but then rose, and the subsequent course of the illness was that of a case of typhoid fever. On October 11 the patient was entirely free of fever, but had the characteristic paleness and emaciation of typhoid fever, as well as the ravenous appetite of the convalescent. At the middle of October the cavity in the spleen had granulated well, and the wound in the thorax was almost cicatrized. When the patient left the hospital on November 5 the area of splenic dulness was about 16×11 cm.

It is likely that this abscess was embolic, and it is known that embolic abscesses are most frequent in the course of the infectious diseases. Without operation the course of such an abscess could scarcely be otherwise than to a fatal termination from rupture and purulent peritonitis, or rupture into the pleural cavity. Lauenstein thinks it probable that in his case the abscess was one arising in the course of typhoid fever. Clearly the most rational and best surgical treatment was that adopted by Lauenstein. For the treatment of such abscesses we must draw conclusions from the results of treatment of abscesses in other internal organs, especially in the liver. The best results in abscess of the liver have been obtained, not by puncture, but by free antiseptic incision, according to Lauenstein, who gives the mortality of the Lindermann-Landau and Volkmann operations as 4.7 per cent. It is true that Barbieri and Parzewski cured two cases of abscess of the spleen by puncture and aspiration, but in both these cases the splenic enlargement and the abscess was accessible through the abdominal wall, which was not the case in Lauenstein's case. Two important steps in the operation reported must be noted: 1. Puncture before the incision, by which the danger of an escape of the putrid contents from the over-full cavity was avoided; 2. Leaving the

canula in the abscess until the opening was completed, so that it served as a guide for the farther opening. Finally, it must be regarded as a wise provision of nature that fixed the diaphragm so completely during the progress of the case, and before the operation. Had the diaphragm continued its work nothing is more likely than that the abscess would have been ruptured, and the contents extravasated. So also, the circumscribed pleuritis at the base of the left lung was of no small consideration, since it caused adhesion between the costal pleura and diaphragm, without which the operation, by opening the left pleural cavity, would have much complicated matters.

Lauenstein gives the following points in the diagnosis of abscess of the spleen, besides the presence of an infectious disease, the changes in temperature, rigors, etc.: 1. Enlargement of the area of dulness. 2. Spontaneous painful sensations. 3. Inflammatory phenomena in the region of the spleen (basal pleuritis and fixed position of the diaphragm). As for fluctuation, this could be detected only in cases in which the enlargement was apparent below the free border of the ribs.

COMMEMORATIVE MEDAL OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.

We are pleased to announce to the subscribers interested that the dies for the "Commemorative Medal of the Ninth International Congress," have been completed. A beautiful specimen, in bronze, struck from one of them is now before us. It is finished in the best style known to the medalic art, and is also creditable to the Congress and the artist.

The medal represents a group of five figures draped in classic costume, as shown in the seal of the Congress, the chief figure of which is *Æsculapius*, the Greek physician, who is seated and prescribing for an infant. The mother of the child, who holds it in lap, is also seated. The two other figures are men standing, the one supporting himself upon a crutch, the other with a bandaged head, resting upon a staff awaiting the advice of the physician. The inscription or legend upon the face and around the medal is as follows: In a straight line beneath the group of figures just described, is "Washington, 1887." Above and surrounding the figures, reading from left to right around the margin, "International Medical Congress;" reading from left to right and around the margin, "N. S. Davis, Pres.; J. B. Hamilton, Sec. Gen.; E. S. F. Arnold, Treas.; J. M. Toner, Reg." On the obverse is a noble head of Washington,

encircling above it the words, "United States of America," and beneath it, "Founder of the Republic."

We take the liberty of stating on our own responsibility that the money subscribed for the medals has been entirely exhausted in their preparation, leaving nothing to pay postage on their delivery. We would therefore respectfully suggest that each subscriber for a medal send to Dr. J. M. Toner, 615 Louisiana Av., Washington, D. C., 15 cents, in stamps, to pay the postage on his medal, and not allow Dr. Toner, who has already spent so much time on the work, to advance the amount from his own pocket.

PREVENTION OF DIPHTHERIA.

Dear Sir:—In your editorial of March 17, 1888, "Public Wealth vs. Public Health," page 334, you refer to diphtheria as "a preventable disease." Will you not kindly publish the formulæ for preventing diphtheria in your next issue, and oblige
A MEMBER.

The writer of the editorial referred to in the above paragraph from our correspondent, used the word "preventable," as applied to diphtheria, in the same sense as it is used by nearly all writers on vital statistics and contagious and infectious diseases, *i. e.*, by assuming the practicability of preventing the development and diffusion of the specific infection from which the disease is supposed to originate. This is sufficiently obvious from the tenor of the article itself. Any disease is preventable in direct proportion to the correctness of our knowledge concerning its essential causes and of our ability to either prevent the development of those causes or to render the human system insensible to their effects. Thus, small-pox is preventable either by avoiding contact with its contagion or by rendering the system insensible to its action by previous vaccination. But diphtheria, erysipelas, cholera, yellow fever, and some other diseases, evidently depend upon specific infections developed outside of the human body, and capable of being introduced into it in connection with the air we inhale or the food and drink we take. Hence, our formula for the prevention of diphtheria does not consist of drugs to be obtained at the apothecaries', but of an abundance of pure air, good water, wholesome food, clean soil, and a clean personality.

INHALATIONS OF CO₂ IN DYSPNŒA.—DR. EDWARD WEIL, says *La Semaine Médicale*, of March 7, 1888, has used inhalations of carbonic acid gas to relieve and prevent paroxysms of dyspnœa and with favorable results. He thinks that the good effect is due to the abolition of reflex sensibility of the pharynx and larynx. The patient is made to inhale the gas

for from two to five minutes, once or twice a day, in quantities of from two to four litres. When the inhalations are made during an attack the dyspnœa is cut short, and the patient breathes easily and comfortably. When the gas is given between the attacks, inspiration becomes more free, and the attacks are prevented, or else diminished in frequency, intensity and duration.

SMALL-POX DECLINING AT SAN FRANCISCO.—The weekly abstract of Sanitary Reports, from the office of the Supervising Surgeon-General of the U. S. Marine Hospital Service, for March 23, 1888, states that only 16 cases of small-pox, and one death, had been reported as occurring in San Francisco from the 1st to the 15th of March.

The medical officers in charge of the Marine Hospital Service at Key West, reports no more cases of small-pox on that Island, under date of March 15, 1888. The disease is also reported as having disappeared entirely from Santiago de Cuba. But it still lingers in Havana, 29 deaths having taken place during the week ending March 10, 1888.

THE CARTWRIGHT LECTURES of the Alumni Association of the College of Physicians and Surgeons, of New York, will be given on Thursday evenings, March 29, April 5, and April 12, at 8.30 P.M., by Prof. William H. Welch, of the Johns Hopkins University on "The General Pathology of Fevers."

EXECUTION OF CRIMINALS.—At a meeting of the New York Medico-Legal Society, on March 16, 1888, a committee reported on the best methods of executing criminals, giving preference to "death by the electric current." The report was adopted by the Society.

THE DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS will hold its next regular meeting at Pana, Ill., April 24, 1888. An interesting programme of work is promised. F. B. Haller, M.D., Vandalia, President; J. H. Miller, M.D., Oconee, Secretary.

ASSOCIATION ITEMS.

A SECTION OF RHINOLOGY AND LARYNGOLOGY PROPOSED.—To the members of the American Medical Association who are interested in Rhinology and Laryngology, I desire to give notice that it is my intention to offer an amendment to the Constitu-

tion of the Association at the next annual meeting, viz: To establish a separate Section of Rhinology and Laryngology in the Association; in other words to separate Rhinology and Laryngology from Ophthalmology and Otolaryngology. Yours, etc.,

CARL H. VON KLEIN.

SOCIETY PROCEEDINGS.

CLINICAL SOCIETY OF MARYLAND.

Stated Meeting, February 3, 1888.

DR. WM. H. WELCH described the

PATHOLOGICAL ANATOMY OF INFECTIOUS PLEURO-PNEUMONIA OF CATTLE.

He said the subject was an interesting one aside from its pathology on account of the economic interest it bore to stock raisers and dairymen. It prevails in this country extensively and large sums of money have been appropriated to stamp it out. If it is not checked it is bound to cause greater loss as time goes on. It has doubtless existed from remote times but only in the last two centuries has its description been accurately carried on. It prevails in this country chiefly in localities east of the Alleghenies. New York and Brooklyn representing one center and Baltimore another. So far it has never gained a firm foothold west of the Alleghenies. The disease is a contagious one, not spontaneous so far as is known, and always due to infection. The period of incubation varies from three weeks to three months and it may be as long as six months. The onset is insidious. The animal begins to cough, its temperature becomes elevated, with loss of appetite, etc. Often much can be determined by physical signs when practiced by experienced hands. Sometimes these acute symptoms subside and the disease passes into a chronic state. Again it may run a latent course and it is then not easily recognized. The disease is a fatal one with an average mortality varying from 30 per cent. to 50 per cent. The distinguishing feature in the normal anatomy of the lungs of cattle is the connective tissue around the lobules. It is not abundant, but characterized by the looseness of its meshes. If the animal dies in the early stage of the disease we find in the lung one or more foci of inflammation. Sometimes the whole lung becomes affected. The affected portion is consolidated; more or less of its elasticity is lost and it is friable. The pleura is always affected and in some cases a well-marked pleurisy is observed. A cut section shows a variety of appearances. Not only are the lobules affected, but the interstitial tissue also. Some lobules may be red, some gray, others dark, etc., and moving through this are bands of tissue. The early stage of the disease is marked by edema, later it is red, and still later the appearance is gray. The interlobular tissue appears as broad bands due to its infiltration with serum and fibrin. The small bronchi are inflamed in the immediate vicinity of the inflamed

area and contain muco-pus and fibrin. The microscope shows that the air cells are filled with the ordinary products of inflammation. In the interlobular tissue the lymph spaces are filled with large blocks of fibrillated fibrin. Emigration of white corpuscles does not penetrate deep into the interior. They are found to undergo coagulation-necrosis.

As regards the termination of the disease there is no proof that the lung ever reaches again its normal state. Sequestra form in the areas of inflammation and fresh pleuro-pneumonia may set up from these. The formation of these sequestra always takes place in the interlobular tissue and bands of tissue run into these which correspond to the bronchi and blood-vessels. The sequestrum may disappear by invasion of granulation tissue from the outside and the exterior becomes peculiarly worm-eaten in appearance. There is no proof that the disease affects other organs than the lungs.

The disease is infectious beyond all doubts. A great many have described organisms and this is the most sensible hypothesis. It has never been produced artificially. The *materie morbi* as yet is open to investigation.

During the course of his remarks Dr. Welch illustrated the points he made with some very beautiful specimens of the disease in its different stages.

DR. PATTERSON, in response to an invitation from the members of the Society, said that he was unable to go into discussion very deeply because Prof. Welch had brought out all of the points of interest pertaining to the disease in question. He did not believe there was any way to eradicate it except by destroying the animals. The subject is such an important one that National legislation should be directed to aid in its suppression.

DR. L. McLANE TIFFANEY asked if the droppings from an infected herd would cause infection in other herds should they come in contact with it.

DR. WELCH said the disease may be transmitted without contact. There is a singular insusceptibility to the disease in some cattle. An animal may be carried to a place and no disease develop. He thinks too that it is necessary to have a National law to eradicate it. National and State laws sometimes cooperate to that end, as in Maryland, for example. Destruction of the animal is the only way to destroy the disease.

DR. PATTERSON, in reply to a question, said that he had not experimented with the milk of animals affected with pleuro-pneumonia and therefore he could not say whether the disease could be transmitted in that way or not. One thing, however, the milk does not secrete in the acute stages and therefore it does not get into the market. Meat in the acute stage is dangerous.

Stated Meeting, February 17, 1888.

DR. W. P. CHUNN, of Baltimore, read a paper on

A NEW SUTURE IN CESAREAN SECTION.

The very short paper here presented is to call attention to a method of suturing designed to be used

to close the incisions made during Cæsarean section. So far as I know it is original and it is left to the Society to judge of its usefulness. In regard to the details of the operation I have a suggestion to make which I think might shorten the time required and prove of great advantage. We know that many patients die of shock on account of length of time, etc., some of septicæmia, etc., septic trouble being produced by escape of fluid from the uterine wound into the peritoneum. The escape of fluid is found to occur by reason of shrinkage of the uterine tissue and consequent loosening of the sutures and gaping of the uterine wound. I offer then as a suggestion and for what it may be worth, the following method of using the same row of sutures for both abdominal and uterine wounds, and thus lessening the chances of shock and septicæmia.

The uterus having been evacuated I would if necessary sew up the upper angle of the abdominal wound in the ordinary way *until* the abdominal wound and the uterine wound were both of the *same length*, then by introducing the ordinary suture through one lip of the abdominal wound, then through the corresponding lip of the uterine wound and crossing over and passing the sutures out through the other lip of the uterine wound, and then out through the corresponding side or lip of the abdominal wound we would obtain a single row of sutures which it seems would close both wounds effectually. The sutures should be entered one-half to three-fourths of an inch from the margin of each wound. In this way the suture being secured a strip of parietal peritoneum comes in contact with a strip of uterine peritoneum along the whole length of the uterine wound, on both sides of the incision, and then the peritoneal cavity is shut off from the uterine discharges. In addition to the adhesive inflammation surrounding the uterine wound we would have parietal peritoneum pressing directly upon the closed uterine incision.

That there are some advantages in this method cannot be denied. The question remains for decision, however, whether the disadvantages will not counter-balance the advantages. There would certainly be a great saving of time and labor as one row of sutures can be put in much more quickly than three rows. If any fistula resulted the discharge would occur outside of the peritoneal cavity.

Any resection of muscular tissue for the purpose of bringing in contact opposing surfaces of peritoneum would be avoided. Surgical shock would be diminished and the operation greatly simplified. The ends of the sutures being outside the abdomen could be lightened as occasion might require. Let us now consider the disadvantages.

1. Would there be sufficient traction exerted to cut out the sutures? I think not. We know that a retroverted uterus may be dragged up out of the pelvis and stitched to the abdominal peritoneum and continue in position. The abdominal walls admit of sufficient *depression* to form firm adhesions about the cervix after an extra peritoneal stump is left behind. This fact shows how depressible the abdominal walls are. Immediately after labor the uterus is at least eight inches in length. At the end of a week it is

six and a half inches in length; so that we can see the relaxed abdominal walls about the upper angle of the wound would only have to sink in an inch and a half during *seven days*. If the parts should remain in contact so long union would be complete. If a fistula should occur in all probability the discharge would flow outside of the abdomen. We know many cases of cattle-horn laceration have gotten well not only without any fistula, but without any stitches having been inserted whatever.

The uterus would not remain permanently elevated any more than a supra-vaginal cervix after an extra-peritoneal hysterectomy. The writer was induced to make these suggestions by watching the results of a similar operation on the bladder where the whole length of that organ was cut open during an exploratory laparotomy for a fibroid tumor of the uterus. The bladder and abdominal walls were stitched together with one row of sutures as already described in such a manner that the two layers of peritoneum stuck fast together, thus preventing a single drop of urine escaping into the peritoneal cavity. Theoretically there would seem to be no objection to the operation as described. To be demonstrated or practical it will have to be tried.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, November 23, 1887.

THE PRESIDENT, JOS. TAHER JOHNSON, M.D.,
IN THE CHAIR.

DR. J. W. BLACKBURN presented a case and specimen of

SARCOMA OF THE SUPRA-RENAL CAPSULE.

(See p. 389.)

DR. SCHEFFER asked Dr. Blackburn if there was any pigmentation of the skin?

DR. BLACKBURN: There was only a slight yellowish tint of the skin, which he thought was due to the jaundice from the obstruction in the gall-bladder.

THE PRESIDENT: Could the tumor have been removed during life?

DR. BLACKBURN saw nothing to prevent it except the adhesions. The blood supply of the tumor was through very small vessels.

DR. SCHEFFER would call attention to the weight of the tumor, which is one and one-half times as great as that of the liver. It would be interesting to know whether the mental disease was merely coincident or based on the origin of the tumor. He thought there was some connection between the mental state and the growth.

DR. LAMB: His own experience with such tumors is that they do not give rise to any well-marked symptoms, and there is an absence of pain. Pigmentation is also absent. Where the capsule has undergone cheesy degeneration we find pigmentations of the skin.

DR. SCHEFFER: It is not rare to find cancer of the capsules coexisting with Addison's disease.

DR. EDES: As to the matter of pigmentation, he had occasion several years ago to look up the subject. A young man consulted him after a distinguished English physician had diagnosed Addison's disease, and he accepted the diagnosis. He did not have the characteristic bronze pigmentation. His skin was dark, but he was of a dark complexioned family, and was also said to have been sunburnt. He thought the man had Addison's disease up to the last, but there were no decided symptoms. The post-mortem showed that every organ in the chest was cancerous. Both capsules were also diseased. He thought the absence of pigmentation in Dr. Blackburn's case was not due to the character of the disease, but to the fact that it was confined to one capsule.

DR. BLACKBURN thought the hemorrhoids were due to the disturbance of the portal circulation.

DR. D. S. LAMB presented a case and specimen of

BONE SYPHILIS.

Colored man, *æt.* 42. Had been sick for years. Was in Freedman's Hospital several times for long periods. Had enlargement of liver and dropsy; cough; vomiting and diarrhoea; jaundice; severe, persistent headache. Died November 1, 1887.

Necropsy by Dr. Lamb: Emaciation extreme. Right inguinal glands enlarged and indurated; external genitals normal.

Vault of skull thick and showed many small gummata, which had caused absorption and exostosis. Scalp and dura mater both closely attached to calvarium. Brain 50 —, normal.

Lower incisor teeth irregular, but no "syphilitic" teeth. Mouth, throat and larynx normal, except several minute abrasions on under side of epiglottis. Tonsils atrophied.

Heart 8 ozs., irregular patch of old pericarditis on right ventricle; slight atheroma of ascending aorta. Several anterior mediastinal glands enlarged, hard, pigmented and contained grayish foci not softened. Firm old pleuritic adhesions on both sides. Right lung 29 ozs., upper lobe cedematous. Left lung 14 ozs. lower lobe contained grayish nodules indefinitely outlined.

Stomach small, mucous membrane smooth. Intestines also appeared atrophied. Liver 34 ozs., appeared normal. Spleen 3½ ozs, pale, thickening of capsule. Right kidney 5 ozs; left 7 ozs. Bladder and prostate normal. Iliac, lumbar and lesser omental glands enlarged, firm, and with grayish foci.

Sections of lung and kidney and pericranium have been set aside for microscopical examination, but I do not think there is any doubt of the case being syphilitic. The nodules in the lung may prove to be tubercular. The enlarged liver had been reduced, I presume, by the iodide treatment. The enlargement of glands in the right inguinal region began while the patient was confined to his bed in hospital, and a careful examination then failed to find any venereal sore; nor was the post-mortem examination any more satisfactory in this respect. Nevertheless, quite an extensive chain of glands in the iliac and lumbar regions was found diseased, as also in the

anterior mediastinum. All of this suggests syphilitic infection acquired except the apparent absence of the primary sore. It may be that the bone disease was from the congenital transmission, though I believe such cases are rare. And it is said that a person already showing evidence of syphilis cannot acquire the disease. Altogether the case has been interesting to me, as well as puzzling.

DR. JOS. TABER JOHNSON reported

THREE CASES OF OVARIOTOMY; TWO DOUBLE AND ONE SINGLE.

(See p. 386.)

DR. LAMB would like Dr. Blackburn to give his experience in examining skulls with reference to syphilis.

DR. BLACKBURN has seen very few well-marked syphilitic cases. In 225 skulls examined he had not seen one with the characters shown by the specimen presented to-night. He had frequently seen syphilitic nodules of bones.

In reply to a question by Dr. KING as to what doses of potassium iodide were given in the case presented? DR. LAMB said that 20 grains were given three times daily.

DR. KING believed in very large doses. He began with 10 grains and increased the dose daily until it reached 300 grains, if necessary.

DR. FRIEDRICH had followed the plan mentioned by Dr. KING until his patient took 1 Troy ounce a day.

DR. KING had heard Dr. Hammond say, in a lecture on anatomy delivered at the University of Vermont that a man with syphilitic epilepsy was so accustomed to the potassium iodide that he bought 12 pounds a week.

DR. CALDWELL had treated a man for syphilis who finally went to the Hot Springs. Upon his return he stated that he had been taking 1 ounce of the potassium iodide daily, and he was apparently cured.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, December 16, 1887.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

DR. J. G. KIERNAN read a paper entitled: CAN A SANE MAN BE CONFINED IN AN ILLINOIS INSANE HOSPITAL?

He discussed the self-contradictory character of the Illinois insane commitment law, and pointed out that under it the brother-in-law of one of the boodlers, without having been legally committed, had been placed, while sane, in the Cook County Insane Hospital, whereupon the Warden, H. H. Varnell, and the Superintendent, Dr. J. C. Spray, had certified to his insanity and presence as a patient of the institution. Such certificates were subsequently used to defend the aforesaid individual from the consequences of a criminal seduction. Dr. Kiernan pointed out that attendants guilty of perjury at the

1885 investigation were retained in the Insane Hospital, and such persons would be excellent tools in the hands of unscrupulous people to prove sane people insane. He urged the Society to assist the State Society in securing the abrogation of the present absurd and brutal law, and to assist in securing State supervision of all places where the insane were kept.

DR. N. S. DAVIS: So far as the paper is concerned, I have no knowledge of the facts. As for the Illinois law for the commitment of the insane, I have had but one opinion since it was enacted. It has seemed to me one of the most unnecessary laws; unjust, and injudicious for the accomplishment of its objects. The object being to prevent the commitment of sane persons to insane asylums and keeping them there, I think it would puzzle any intelligent physician conversant with the insane and with the ordinary proceedings of courts and juries to tell wherein there is the least degree greater security with this law than there is with the ordinary laws that exist in almost all other civilized countries in regard to the commitment of the insane. There are a large number of the insane that are totally unfit to be taken before a jury or in a public court and confronted as the law requires, and in order to avoid it the judge must evade the law. The idea of taking a woman in puerperal or childbed insanity to a public court; under intense excitement and in a physical condition where the most humane thing that could be done would be to secure for her quiet and seclusion, is revolting to every sane mind. The process the law requires is so utterly repugnant to their sense of justice that some judges have evaded it by instituting private examinations of the parties at their homes. But the law should not be drawn in such a way that humanity requires it to be evaded.

I had the misfortune to have a young lady under my care not many months ago, who was brought here from another State in hopes that she would be relieved by taking her away from home. But instead of being benefited she became more decidedly and excitedly insane. Her friends here found themselves in a dilemma. Her mother brought her here to the house of relatives, and instead of getting better she had become decidedly worse, requiring the most vigilant care day and night, so they began to look about to see how they could secure her and relieve themselves, and they came to me for advice and wanted to know if there was not some private institution that she could be taken to? I told them there were certainly institutions and, so far as I knew, perfectly reliable ones, as well as State institutions; but they would be obliged to go before a court and have her go through the form of a trial and be recorded in court as convicted of insanity. That idea stands directly in the way of a great many of our best citizens who unfortunately have a member of the family become insane. It is regarded, whether rightly or not, as put upon record for the inspection of the world and all future time; and such a verdict of insanity is regarded by a large class of intelligent people as a bar or hindrance to perhaps the most desirable prospects and chances in life, and they rebel against it and ask us, What else can we do?

I said to these people: There is no other way known to me but to take her out of the State just as you brought her in; you will have to take the risk and take her away or leave her where she is. They made preparations to take her to an institution near Cincinnati, to avoid our law. And I have known of not a few cases taken out of the city quietly because people will not submit to that procedure which increases insanity sometimes to a dangerous extent. I think if that delicate girl had been taken to the courtroom and confronted by a jury, in accordance with the terms of that law, with the incipient indications of meningitis that she was laboring under, it would probably have increased it into complete meningeal inflammation and probable death within a week. But, fortunately, the case terminated more favorably. The family kindly consented to have her remain where she was and each to do what they could. A reliable nurse was obtained, and the mother was to take the place of the nurse only long enough for her to sleep. And the nurse and I agreed to do what we could to get the patient well and, having her thus secluded, the young lady in time got well, went home, and is as well to-day as any other girl in her native State.

I give this instance to show that there is absolute harm worked to the insane by this law, which secures no greater certainty of preventing those who are not insane being placed in an asylum, not one whit more than the law of New York or Wisconsin, or a dozen other States, or the laws of almost any other civilized country.

Talking about medical men—three medical men in succession separately examining a case personally and acquainting themselves with it, and going before a magistrate and making oath to the correctness of their statements should certainly be not less reliable than a jury of non-professional men summoned from the street, with but one physician among them. I do not think the profession of this State ought to rest contented until the bad features of that law are removed. If they need a jury law in any case, let it be retained only for such accused parties as may ask for a jury, or whose friends may ask it for them. And then make it a real jury, just the same as any other jury that is deemed competent in a court of record, and not a halfway jury summoned from the street corners. But in all cases where the parties accused or their responsible friends do not ask for a jury, let the same testimony that the rest of the civilized world accepts be considered satisfactory for the State of Illinois, and I think we will have better credit, exercise greater humanity, and secure better results to the insane as well as to those who are not insane.

DR. G. C. PAOLI: So far as Chicago is concerned, I have several times had an opportunity of shaming the injustice of trials for insanity before the courts. I remember the case of a lady whose family physician I had been. She was, though a woman of strong common sense, of an extremely nervous temperament. Her husband wanted her to sign over to him not only their joint property, but also property that belonged to her individually. This she refused to do. The husband then came to my office and said that he wanted

me to go into court to testify to his wife's insanity. I told him that if either of them was insane it was himself and not she. He was displeased at this and told me of a physician who at first decided that she was not insane, but finally, through undue influence, his judgment was reversed and he pronounced the poor woman insane. I gave a history of the case and the woman was adjudged sane. She afterward studied law and has, I understand, been admitted to the bar. In another case a woman married a man who afterwards became infatuated with another woman and wanted to marry her, and in order to get rid of his wife he paid a great deal of money to prove that she was insane. Meanwhile friends who were interested in her case, not receiving notice of her trial, procured another trial and the woman was saved. This shows the loose way in which the business is done. These trials are conducted in a way that is a shame to the State of Illinois. These two women would no doubt be in the lunatic asylum to-day if somebody had not taken an interest in them. The jury that decides these important questions should be composed of physicians, and not of men from the various walks of life, who are not competent to decide on this subject; and sometimes, though there be one physician amongst the jurors, he may not be competent to diagnose a case of insanity.

DR. FRANK BILLINGS: I cannot discuss the subject, but I should like to ask a question of Dr. Kiernan that pertains to the subject. About two years ago, and within the last six months, I have had patients whom it was necessary to send to an asylum. The people were so situated that they did not care to go before a jury, and they were both put in a private asylum. I have been told that should these patients awake to the fact that they had been put in an asylum, those who put them there would be liable for damages.

DR. J. G. KIERNAN: The point raised by Dr. Billings is covered by the Section I have read, that says the person shall be liable to civil and criminal damages, to one year's imprisonment in the county jail and to fine or both, and to suit for civil damages. Another state of things is even more curious: supposing the patient be a case of melancholia who, as frequently happens, recognizes the importance of certain suicidal impulses and desires to place himself under control. Supposing that patient should be put under control at his own request, without a jury trial, and taken to an institution. For doing that thing at the request of the patient any one would be liable to criminal and civil prosecution. The law, it is almost unnecessary to state, was passed at the instance of a paranoia named Mrs. Packard, who had been in the Jacksonville institution. One of those enterprising humbugs who run newspapers went there, was touched by the woman's story, wrote up the case, and there was a great liberation epidemic; yet this woman was rightfully placed under humane laws in that institution. With regard to the case in France of which Dr. Paoli has spoken, I am acquainted with its history. I must confess that I think the man was placed rightfully in an insane asylum. The newspapers have stated the other way,

but the newspaper medicine is always absurd. The man was placed there under the authority of one of the most able alienists this age has produced, Legrand du Saulle, one whose dictum has almost as much weight as a law.

Another patient was liberated under almost the same circumstances from an English insane hospital. She has just been sent back to the asylum as, so her newspaper friends say, the result of her dissipation, but really this resulted from her insanity. She was previously reputable.

The law here would not stand the test of the Supreme Court. If a person committed to the asylum should appeal to the Supreme Court he would be set free. The finding of the jury is merely an inquest; an indefinite something is to come but never comes.

In regard to how the juries are constituted I may be permitted to cite one instance: In 1884 there was a man on trial who was clearly insane. A man got himself put on the jury to spite the brother of the patient, and declared a man sane who believed that his brother, while on the witness stand in open court, was forcing compressed air into him with a patent electric apparatus. The verdict was so absurd that the judge set it aside.

Another harshness results under this law: Suppose a man in moderate circumstances has an insane relative, but he cannot afford to pay his board at an insane asylum, that friend must be decided a pauper. On the other hand, the judge may decide that the insane man is not a pauper because the insane man's brother gets \$12 a week, although he may have five children to support, and the latter has to pay his board for boodlers to pocket. This is frequently done.

In regard to the case I have stated, the certificates read are all on file in that court, and they can be procured at any time. The case was one in which there was no doubt of the object. While the man was at the institution he was going on the bail bond of two other people, and his mental condition was not questioned; the point did not lie in the fact of his being sent there. Here is an institution that is not visited for years by the supervisors of our State. This institution is under the control, to all intents and purposes, of a set of politicians. Under this, the law, and by aid of the art of "jury-fixing" so commonly used, a sane man, obnoxious to the "boodlers," could be adjudged insane. The vile attendants would swear to his violence and the Superintendent would, judging from the certificates quoted, do the same. The law should be amended to secure privacy in commitment and proper State supervision afterwards.

DR. W. T. BELFIELD exhibited a specimen of the

BACILLI OF INTERMITTENT FEVER,

and said: This specimen is exhibited through the kindness of Dr. William T. Councilman, associate professor of pathology in the Johns Hopkins University. It presents the organisms first described by Lavarán. They are contained in the blood corpuscles that are abstracted from the body of a patient just before, during or after the chill characteristic of

intermittent fever. They are always present at that time, being contained in numerous corpuscles, and are not found except at that period—about the time of the chill. Nor are they found in the blood of individuals who are not suffering from intermittent fever. That, so far as I am aware, is the extent of the investigation that has been made. They are merely characteristic organisms found in the blood corpuscles during the chill of intermittent fever. Of course this does not prove any causal relation of the organisms to the disease; that requires cultivation outside of the body and inoculations with pure cultures. These have not been made; therefore it would not be justifiable to say—and observers do not say—that these organisms are the cause of intermittent fever. But observations are sufficiently numerous to warrant the assertion that these organisms are characteristic of the blood of patients suffering from that disease. In that respect they rank with the spirillum of Obermeier, which was one of the earliest of the organisms observed in the blood.

DR. N. S. DAVIS: Did I understand that they are found only in the blood at the stage of the chill—after the chill disappears, during the febrile stage?

DR. BELFIELD: That is the universal statement of observers. They are present for a short time before and after the chill.

DR. R. H. BARCOCK: Has the effect of the solution of quinine been tried on these organisms?

DR. BELFIELD: Not to my knowledge, in the blood outside of the body. The administration of quinine to the patient, however, causes a rapid and complete disappearance of these bodies from the blood corpuscles.

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, February 4, 1888.

THE PRESIDENT, Y. H. BOND, M.D., IN THE CHAIR

DR. H. H. MUDD read the history of a case of FRACTURE OF THE FEMUR, WITH RUPTURE OF THE LEFT FEMORAL VEIN AND ARTERY.

The patient entered the City Hospital at 3.30 P.M., Monday, January 23. Two hours before he fell four stories through the hatchway of an elevator. When brought to the hospital he was suffering from shock: the pulse was weak—130 per minute—respiration shallow—30 per minute; skin covered with perspiration, the extremities, especially the lower, cold; the left thigh was deformed, there being a sharp bend at the junction of the lower and middle third, the thigh was increased in circumference. Above the bend it was exceedingly tense, and could scarcely be indented with the finger. There was a tumor eight centimeters in diameter on the outer surface of the knee, and over the external condyle the parts were discolored, and there was a slight abrasion. Crepitus was felt at the point of deformity; no pulsation could be felt in any artery below the point of fracture; the patient's temperature was 37.4 C. General sensation was much diminished as

far up as the knee, and was entirely absent over the foot. The specimen presented shows a complete rupture of the femoral artery about the junction of the lower with the middle third of the bone and near the lower extremity of the femoral artery, just below the point of the complete rupture is a second, extending through one third of the calibre of the artery. The vein shows a longitudinal, irregular laceration, extending across perhaps one-half of its circumference. I think it is a little exaggerated now. It will be seen that the vein and artery were both involved. I find in the International Encyclopedia of Surgery—Ashhurst's, from an article written by Liddell, this quotation. I quote it to show something of the status of the treatment in 1883 and 1886, because I think there is a change in the feeling of the profession concerning the proper treatment:

"Ligation of artery and vein simultaneously for venous hæmorrhage: When a large vein is wounded and bleeding, Professor Langenbeck recommends that, as an hæmostatic measure, the accompanying artery should be tied as well as the injured vein. He believes that when both artery and vein are tied, not only does gangrene not follow, but there is less disturbance to the capillary circulation than when the vein or artery alone is tied." He states that, by simultaneous ligation of both artery and vein. "An equilibrium is maintained between the arteries and veins until the collateral circulation is established. Two observations which I have already presented strongly support these views. One of them was a case related by the late Dr. George McClellan, in which, the femoral vein being lacerated, the femoral artery was ligatured, the hæmorrhage was easily restrained by compression, and the result was successful. The other occurred to Professor Agnew; in it the hæmorrhage from a punctured femoral vein ceased on applying a ligature to the accompanying femoral artery, and did not recur. That gangrene is not an inevitable result, and is but rarely to be expected in such instances, is well shown by the cases of Professor Grillo, of Naples, who included the femoral artery and vein in the same ligature in fifteen cases of aneurism of the ham or lower part of the thigh. These were all successful; while in fourteen other cases, in which the artery was isolated and tied alone, there were two deaths from secondary hæmorrhage."

Again, "The main artery of the lower extremities is rent asunder without external wound much oftener than many suppose."

The indications for treatment in such injuries as that may be summed up under perhaps four heads, and under those four heads I find this statement:

"Compression of the femoral artery at the pubes, from its innocuousness, and the remarkable success which has attended its use, is far preferable to any other plan of treatment; and the surgeon should always make faithful trial of it, when practicable before proceeding to operate with the knife."

2. "The old operation, that is, the ligation of the torn artery itself in the wound, above and below the rent in its tunic, although J. L. Petit performed it with success, is not admissible in cases of simple

fractures. There is no pretext under which a surgeon can justify himself in voluntarily converting a subcutaneous into an open fracture."

3. "Ligation of the superficial femoral artery, at or above the middle of the thigh, as originally recommended and practiced by Dupuytren, is the operation which must be performed in cases of diffuse aneurism, resulting from fractures of the leg that are simple or unattended with external wounds, whenever compression of the femoral artery is impracticable or proven ineffectual."

4. "Amputation at the knee should be performed, without delay, as soon as gangrene appears in the toes or foot belonging to a limb where this accident had occurred; and there is but one circumstance besides gangrene which makes this operation admissible for the lesion in question, and that circumstance is the failure of all other plans of treatment."

From these quotations it would seem that the simultaneous ligation of the artery and vein does not materially increase the gravity of the case, but is rather a mitigating circumstance, and that gangrene is not so likely to follow as if only the artery were ligated. If the vein itself is injured and that alone ligated, the danger is still further increased, from secondary hæmorrhage, and from giving way of the vein. Gangrene had already supervened when I saw the case, forty-eight hours after the accident, I thought possibly we might have the artery in such a condition that it would carry on the circulation and enable us to save the limb even below the site of the fracture. When I made an incision into the part I found a large coagulum of venous blood, and when that was detached arterial blood flowed. After finding the condition of the parts, with injury both to the artery and vein with gangrene already present, we amputated the thigh above the site of injury, and the patient is in a way to recovery. Now what are the dangers to such an injury? First, the danger of primary hæmorrhage, which our patient had already passed. Second, the danger of secondary hæmorrhage. This we should pretty certainly have had in this case, if we had simply waited, as the coagulum, which was a large one, was diffused in the tissues. For when it softened, we should have had the clot in the vessel itself breaking down, and secondary hæmorrhage would have been the result. Now the question comes up, and pertinently I think, whether gangrene is less likely to occur if we depend upon compression, or ligation at a proximal point or a point of election, or when we cut down upon the part and free the tissues and ligature directly at the point of injury immediately. Shall we cut down upon a fracture? With a rupture of the artery, with such symptoms as we had here, I think we are justified in converting a simple fracture unto a compound fracture; that our proper surgical procedure is not to depend upon compression, but to cut directly down upon the injured part and free it from the coagulum to lessen the tension of the part, cleanse it, and ligate not only the artery, but if necessary the vein, thus giving an opportunity for the development of the collateral, circulation. The collateral circulation is more likely to be reëstab-

lished from an injury at one point in the artery than it is at two. Every thing favors this plan of treatment, if we are safe in making it a compound fracture instead of a simple one. We have in the original injury conditions which favor sepsis; we have a large coagulum; we have the sheath of the artery itself dissected away from the coat of the artery by the coagulum which pushes back into the connective tissue and interferes with the nutrition of the artery itself; the tissues of the leg are disturbed in their nutrition, because we have loose connective tissue infiltrated by a dense firm coagulum which prevents free circulation and gangrene supervenes because of the interference with the circulation by the coagulum and the tension of the parts. The injury, if promptly met and treated gives no more reason for gangrene than would the simple ligation of the artery or but little more; it certainly would not if the wound can be maintained in an aseptic condition. Once more I quote:

"In gun-shot severance of the femoral artery with fracture of the femur I believe it is always best to amputate without delay, because gangrene is almost certain to ensue if the limb be not cut off."

It seems to me that with our improved facilities for controlling inflammatory affections about wounds, that we are justified in cases of fracture of the femur with injury to the femoral artery, or any of its large branches, in seeking at once the site of the injury and placing a ligature about it. The collateral circulation is more readily developed than in would be if the ligature had been placed at the site of election above injury. Danger of secondary hæmorrhage is much less than if we trust to compression. Gangrene is much less likely to supervene for, cleaning out the clots, freeing the vessels from pressure we limit the inflammation which is sure to follow such extravasation of blood as we get from the rupture of a large artery. The increased difficulty of ligation at the point of injury should be no bar to the early adoption of this proceeding. Rendering a simple fracture compound is now the lesser of the two evils presented. Compound fractures under present management are very much more innocent of harm than is a ruptured artery treated under the old rules and methods.

I might cite several cases which have come under my personal observation. I once saw a policeman who was shot and the femoral artery severed about the same point as this. The artery was ligated at the site of election above; gangrene supervened and the patient died on the fourth day. I also saw a patient whose axillary artery and vein were both perforated by a bullet, and an aneurism developed; when I saw the patient some days afterwards, I ligated the subclavian artery; a secondary hæmorrhage occurred several days later. I think it was the second or third day after the ligature was placed in position that the patient suddenly suffered a severe sense of oppression with hæmorrhage. Another hæmorrhage occurred later associated with severe oppression of the chest, and the patient died. Making a post-mortem, we found that the vein and artery were both perforated, and ligature placed on the

artery was in proper position, and the secondary hemorrhage occurred from the axillary vein and not from the artery. The death of the patient was probably from insulation of air, for the left auricle and a portion of the vena cava were filled with grumous blood—air mixed with the blood; and there was quite an extensive coagulum extending through the heart.

DR. MEISENBACH: There is not a man practicing surgery who may not at some time be brought face to face with the condition which has been described by Dr. Mudd. I have met with only one case that I now recollect in which there was probably a rupture of the femoral artery. This case occurred in a man who was working under a railroad car; a barrel, which had been placed under one end to prop it up gave way, and struck the man on the thigh. When I saw the patient he presented very much the appearance that Dr. Mudd has described; the leg was shortened, out of line, and there was a bend in the thigh; the thigh was very thick and tense. There was a wound into which I could introduce my finger, and through which a portion of the thigh bone protruded. At the time I examined him I was very much in doubt as to whether there was any pulsation of the tibial artery, and whether the femoral artery was not ruptured. I could not positively determine. I treated the case conservatively, put on a long Lister splint, and applied ice and watched results. After a number of hours I found a distinct but very small beat in the posterior tibial artery. But the circulation became stronger and after a number of days I was enabled to put on a Hodgen splint, and treating the wound as aseptically as I knew how had the satisfaction of getting a very good union of the thigh bone, without shortening. The man is in good condition and has never suffered any evil consequences. I think Dr. Mudd struck the key note in saying that where the artery is involved, where the fracture is such as to leave no doubt as to the rupture of the artery, the simple fracture should be converted into a compound one. Why should the surgeon hesitate to make a simple fracture compound in this case? He is just as much justified in cutting down and making a simple fracture of the thigh a compound fracture as he is in cutting down upon the humerus and wiring the ends of the bones together. There is no greater danger in the one case than there is in the other. The compression at the pubes acts, it seems to me, in the same way that does the placing of a ligament around both vessels at the proximal end; the difference of course being in favor of opening the wound and ligating the vessels at the site of injury. I think Dr. Mudd stated that the man fell out of a window. I think that ruptures and injuries of arteries are very often determined by the direction in which the force which causes the injuries to the artery is applied. Thus an injury which has a tendency to produce an acute bending of the limb at the time of the reception of the injury would be much more liable to injure an artery, that is, drive the bone into the artery, or rub it across the artery in such a way as to cause a rupture, than in a case where the artery would not come into line. Thus

any injury which has a tendency to bend the limb at an acute angle would have a greater tendency to drive the bone against the artery in such a way as to rupture it, entirely or partially, and to be followed by rupture in the course of time producing an aneurism or some other condition which involves rupture.

DR. D. V. DEAN: I wish to say only that in such cases as Dr. Mudd has cited, in my opinion, the impropriety would consist in not making the wound an open one, even for explorative purposes, and afterward adopting such procedures as might be found necessary.

DR. BROOME: I rather incline to the conservative practice of surgery, and would like to have seen conservative principles applied in this case. You know it was said of the father of American surgery that he never spilled a drop of blood uselessly. And I think now when occasionally I hear reports read before this Society, that perhaps we ought to return to those principles. I know just how difficult it is to determine what to do under circumstances like those stated by Dr. Mudd. Here is a large, stout man who has fallen and has received a very severe injury; he finds that the skin is immensely tense and everything points to an abundant hemorrhage underneath the skin; the circulation in the extremity is very feeble, if there is any at all. But I understand that in this case there was some circulation, and I think the circulation was growing stronger. Furthermore, I infer from Dr. Mudd's statement that there was a clot, and that there was no hemorrhage at the time of the operation. The question is, what would have been the results had he clung to the principle to which I have just referred. I would like to know what he thinks about it himself. In the case of the policeman to which Dr. Mudd referred, the patient was seen immediately after he was shot; of course there was hemorrhage at that time; but in the case which he saw after three or four days standing, blood-clot had formed and no hemorrhage, and the bleeding did not occur again until after he cut down upon the part. I would have liked to have seen compression applied in this case, and a conservative course adopted. I think we should be very careful and cautious at all events. I should probably have done just what Dr. Mudd did, had it been my case, still I would like to have the doctor tell us what he thinks would have been the result had a conservative practice been followed in the case.

DR. MUDD: The artery at the point of its rupture is included in pretty firm tissue which forms Hunter's canal, and it is pretty closely fixed to the bone. The artery could not readily elude the bone, and it was cut by the sharp end of the bone fairly across. The conservative surgery of the old authors, of recent authors and of all other authorities, so far as I know, would have suggested, at the time that we saw this case on Wednesday last, and at the time Dr. Broome saw it, that we amputate without further delay. Gangrene was then present, and the foot showed no evidence of a return of circulation. The return of the circulation

was evident on the skin of the shin perhaps one-third of the way up; but the gangrenous process was already established, and my belief is that it was proceeding up the limb; and the question which presented itself to me was not whether we could save the whole of the leg, but any portion of it below the knee, and the effort to accomplish this determined the first exploratory incision. I was satisfied that with the circulation in the condition which we found it; with a large clot present in the soft tissues; with the decomposition which was sure to occur; with the gangrene already established and sepsis already present, that we should have the gangrene extending rapidly unless that wound was cleaned out. In other words, this patient would have died if we had not amputated the leg, unless we could restore the circulation more perfectly than it was at that time, or more perfectly than nature could have reestablished it under the circumstances. I hesitate to make a suggestion enlarging the field of operative surgery. It has extended so rapidly, has involved so many new questions, that even the oldest heads are puzzled to know where to stop and what to do, and it was only after considering the danger which would follow the conservative method of temporizing with such an injury, and thinking of the fatal results which have followed in the past, that I was led to adopt this method of direct and immediate interference, and I believe it to be a conservative plan, because, although primary hæmorrhage was arrested here, the very conditions that we found showed that the hæmorrhage would have recurred if the man had survived the gangrene. The point that I endeavored to make plain, I believe is a good one, to-wit: that the gangrene is much more likely to supervene when we have an injury to the artery with such a tense condition of tissues as we had here, with the artery compressed, the venous circulation disturbed, because of the pressure and with the sheath of the artery, which supplies the blood, which gives nourishment to the coats of the vessels detached, than if we open up and cleanse the part, free it from this pressure, ligate the artery and vein if necessary, and put the part in a condition to develop the collateral circulation. If you will take the five hundred or more cases of fracture reported by Dr. Dennis a year ago, and the cases that have come under the observation of other men who practice surgery today, and see the good results that follow the practice of aseptic surgery in the treatment of compound fractures, you will readily conceive and concede that it is conservative surgery to ligate the artery and make the simple fracture compound. If there is anything that brings to the surgeon an uneasy pillow, it is watching these cases of injury of the arteries and temporizing with them, depending upon pressure; waiting for secondary hæmorrhage to come to demand the interference that he ought to have made at first.

THE GOVERNOR OF BUENOS AYRES has authorized Mr. Neild to practice preventive vaccination for charbon, by the Pasteur method.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Late Hereditary Syphilis—Commencement of the University Medical School: of Bellevue Hospital Medical College—The New York Quarantine Station—Salary of the Health Officer.

At the last meeting of the Academy of Medicine in March, Dr. Frederick R. Sturgis read a paper on "Some Questions in Connection with Syphilis Hereditaria Tarda," at the conclusion of which he expressed the opinion that late lesions never appear in hereditary syphilis, any more than in the acquired disease, without being preceded by earlier and minor syphilitic symptoms. In the discussion which followed the paper, while most of the speakers referred to cases in which no record or trace of this early history could be found, there seemed to be a unanimous concurrence in this view.

The subject, Dr. Sturgis said, was one of special interest to the general practitioner as well as the syphilographer, on account of its relations to the etiology of many cases met with. It had formerly been involved in much obscurity, and although great advances had been made during the last twenty years, many points still remained unelucidated. The question was still asked, Can hereditary syphilis remain latent for years? Until recently this was supposed to be a fact in certain exceptional cases of acquired syphilis; but the weight of evidence now showed beyond question that such a thing never occurred in the latter. It was the generally accepted opinion at the present day that, in cases apparently of this kind, other and lighter manifestations of syphilis invariably preceded the so-called tertiary symptoms. There was always an initial lesion, although no trace of it might afterwards remain.

It was at one time supposed that in all cases of hereditary syphilis the disease showed itself at birth, but the fact was now recognized that many cases occurred in which the child was apparently perfectly healthy when born. Statistics showed, however, that in a large proportion of cases syphilitic lesions made their appearance before the end of the third month. Of 249 cases collected by Diday and other authorities, the disease showed itself in 118 by the end of the first month, in 117 between this time and the end of the third month, and in 14 later than the third month. Of Diday's own cases, in two the lesions did not appear until after the first year. In instances in which the disease first showed itself at a very late period the question of acquired syphilis always had to be taken into consideration.

The usual history of inherited syphilis, exclusive of those cases in which the child was born syphilitic, was that after a few weeks or months the earlier manifestations of the disease made their appearance, such as a macular eruption or mucous patches of the mouth and tongue. At this early stage there was usually no eye or ear lesion, or affection of the bones or joints. These lesions soon passed away, and there

might be no further syphilitic trouble for years, or until the age of puberty was reached; when there might develop keratitis, otitis, disease of the bones or joints, or deep ulcerations in the buccal or nasal cavities. Unless the early history of the patient could be accurately learned, it might be supposed that these late manifestations constituted the first appearance of the disease, as in an interesting case occurring in a man of 30, related by Fournier, in which the missing links in the history were supplied by the patient's family physician. Even the diagnostic sign of Hutchinson's teeth was often absent in these cases.

In the discussion on the paper Dr. Edward L. Keyes said that he could state with positiveness that it had not been his experience to see any cases of what could be properly called late hereditary syphilis. He had, indeed, met with alleged cases of this character, but in all of them he was able to detect some scar or deformity which convinced him that the late lesions present were not the first manifestations of syphilis in the patient. He had followed up a number of individuals who were known to have had hereditary syphilis, and found that, after various periods of latency, the disease sometimes broke out again before the age of 21. Before they reached the age of 25, however, when crystallization of the system had taken place, the trouble had been pretty well gotten through with; and he did not recall a single instance in which a new symptom of hereditary syphilis had appeared after this latter age. The character of the disease in any particular case was also largely a matter of soil; so that he did not believe in a virulent or a benign type of syphilis *per se*, the seriousness of the symptoms depending to a great extent on the constitutional characteristics of the subject. In this connection he referred to three brothers, all of whom had syphilis at different times, and in all of whom it produced grave lesions of the central nervous system, which in one of them proved fatal; yet the third of the brothers gave the disease to a young woman who had it in an extremely light form. Incidentally Dr. Keyes spoke of a method of treatment in congenital syphilis which he had worked out some years ago at the New York Foundling Asylum, and which he had always found very satisfactory. This consisted in the administration of the $\frac{1}{10}$ of a grain of bichloride of mercury every hour or, if that was not practicable, of the $\frac{1}{10}$ of a grain every two hours, night and day; the medicine being given in water or in the child's food. Later, the intervals between the doses could be extended to four hours or more. He had never known this course of treatment to produce mercurialization and, in fact, it had often seemed to have a salutary effect upon the diarrhoea from which the infants at the Foundling Asylum were so apt to suffer.

Dr. P. A. Morrow said that he could see no reason why hereditary syphilis should not continue through a lifetime, just as the acquired disease was often known to do. It was essentially the same affection. So far as his experience went, there was absolutely no history of the early manifestations of the disease in many cases; but this was, of course, merely neg-

ative evidence, and it was contrary to his general knowledge of the disease to suppose that in any instance the patient had really escaped these earlier manifestations.

Dr. Roland W. Taylor said that it was his firm conviction that there were always some manifestations in early infancy, though these might be so ephemeral or so unaccompanied by destructive action that they left no permanent trace. We might expect the later lesions to appear at almost any time up to about the twenty-first year. In the section on inherited syphilis in Bumstead and Taylor's work, he said, he had placed the usual limit at 12 years; although, as was well known, manifestations of hereditary syphilis occasionally showed themselves at a considerably later period, for the reason that he found that other affections would be likely to be confounded with inherited syphilis, which was so comparatively rare at these later ages. Dr. Taylor said that in his work published in 1876 he was the first American to call attention to the bone lesions of syphilis, and to bring them out of the slough of so-called scrofula. All the way up to the age of puberty we might expect the later manifestations. When we got beyond the twenty-first year it was pretty hard to say whether one was dealing with syphilis or not. As a rule, the activity of the lesions occurred before the tenth or twelfth year.

Dr. L. Bolton Bangs said that he was in accord with the other speakers in regard to the question at issue, and his own observation had been that almost invariably, by careful inquiry and investigation, he had been able to find some history of previous symptoms.

Dr. Chapin said that he agreed with Dr. Keyes as to the importance of the kind of soil into which the syphilitic infection was introduced, and said that he had known of many syphilitic infants with scurries and mucous patches who were fat and robust, and really seemed to thrive on the disease. As to the later lesions occurring in individuals beyond the age of 10 or 12 years, he thought they might as well be called scrofula as syphilis. If there were no typical lesions of syphilis present, it was his practice to put patient on cod-liver oil and other tonic treatment, as he was unable to decide whether the trouble was really syphilitic or not.

Dr. L. Emmett Holt said that it seemed to him to be the easiest thing in the world that the earlier manifestations of hereditary syphilis should be overlooked. In the course of his remarks he called attention to the importance, as a diagnostic sign of the disease, of enlargement of the epitrochlear glands, and said that although this condition might be due to other causes, in his experience very few cases of syphilis occurred without such enlargement.

Dr. A. Jacobi said that when syphilis occurred at birth it was not always easy to recognize positively. There was sometimes great difficulty in distinguishing between a syphilitic and a rachitic bone, or rather cartilage, and particularly when the ribs were affected. If the difficulty, then, was great at this early period, it was still greater later on. It was a fact that where a number of children were born in a

syphilitic family the manifestations were apt to become less and less marked in each successive child, and the disease might at last be indistinguishable from so called rachitis or so called scrofula.

In closing the discussion Dr. Sturgis said that what he meant by the late lesions of hereditary syphilis was those occurring after the age of 5 years, and he believed that such late manifestations did not occur without previous symptoms. The children in which these late lesions were found were apt to be born apparently healthy, and when the earlier manifestations did occur, they might escape notice and remain untreated. It was in the untreated cases that the later lesions were most liable to make their appearance. At the age of 5 or 6 years they were apt to have punctate interstitial keratitis and disease of the ears, joints, etc., and nothing would be found to do any good until the iodide of potassium was resorted to. Under this treatment the child would probably get well rapidly. At 10 there was likely to be another outbreak of trouble, and about the age of puberty the most serious explosion usually occurred. After the age of 25 the disease would generally be found to be acquired. If a patient over this age presented himself with the earlier symptoms of syphilis we could almost universally suspect that the disease was acquired, since the early manifestations of the inherited disease were most likely to show themselves within three months from birth, and always did so within the first year.

At the Commencement of the University Medical School, which occurred at the Metropolitan Opera House March 6, there were 164 graduates, and at that of Bellevue Hospital Medical College, which occurred at the Carnegie Laboratory March 12, the day of the great blizzard, 144 graduates.

The bill placing the New York Quarantine Station on a more business-like basis by reducing the salary of the Health Officer to \$10,000, cutting down the fees, etc., which was introduced into the State Senate in January has now passed both branches of the Legislature.

P. E. P.

LETTER FROM BOSTON.

FROM OUR OWN CORRESPONDENT.

The Surgical Use of Hebra's Continual Bath or Water-bed—Laparotomy for Tubercular Peritonitis—Treatment of Fractures of the External Condyle of the Humerus—A New Method for the Removal of Powder Grains from the Face.

At the meeting of the Surgical Section of the Suffolk District Medical Society, on March 7th, Dr. Otis K. Newell read a paper on "The Surgical Use of Hebra's Continual Bath or Water-bed," of which he had had personal observation. In addition to its use in the treatment of eczema and other cutaneous diseases, the continual bath has been used with success in the treatment of gangrene, bedsores, etc., and more especially severe burns, where its beneficial effects are particularly noticeable. Patients are sometimes kept in the water for a very long time. One patient was in the bath 385 days. They are

removed only for evacuation of the bowels and bladder and they take their meals and sleep when in the water. The danger of drowning is much less than seems apparent at first thought. If a patient is very weak the precaution may be taken to support him by a bandage passing around the body under the arms, which is secured at the head of the bath to prevent his slipping down the inclined portion that raises the head out of water. Only the palms and soles suffer and these only during the first few days. They become shriveled and folded like a washerwoman's hands and the condition is much alleviated by applications of substances of a greasy nature. A papular eruption occurs on the parts which are both in and out of the water, as the arms and thorax. This, however, heals spontaneously. Hebra's beds contain 675 litres of water. When a patient first enters the bath the temperature of the water is 30° C. (86° F.), which seems warm to him. The heat is gradually raised to 35° or 37° C. (95° or 98.6° F.), which is kept constant by a simple arrangement by means of a kerosene lamp.

Dr. A. T. Cabot read a paper on "Laparotomy for Tubercular Peritonitis," reporting a case in which he had operated on a girl 16 years of age. She had been previously tapped and 3 pints and 6 ounces of ascitic fluid withdrawn. In operating he made an incision in the median line between the umbilicus and the pubes. He found a localized encysted peritonitis containing ascitic fluid and the walls did not collapse on removal of the fluid. The peritoneum was so studded with miliary tubercles that it gave a feeling as if the finger had been thrust among small lead shot. A drainage tube was inserted and there was gradual recovery. He also reported a case of general tuberculous peritonitis in a girl 3 years old for which he had operated with good results and the patient was shown. In this case the wound was at once closed, and Dr. C. prefers this method to drainage. This treatment for tuberculous peritonitis was accidentally discovered by Sir Spencer Welles over 20 years ago when he was operating for something else, and this patient is now alive. Hirschfeld has reported an autopsy where no tubercles could be found although they had existed previous to the operation. Dr. Cabot suggested as cause of the disappearance of the tubercles, adhesions between the walls of the collapsed sac after the removal of the fluid and the encysting of the tubercles by connective tissue cells.

Dr. Elliot reported a case of successful operation for general tuberculous peritonitis in a girl 16 years old, and Dr. John Homans reported two cases of laparotomy and one by tapping for tuberculous peritonitis.

Dr. G. W. Gay has treated external condyle of the humerus with the right angle splint. He has seen follow dislocation of the radius forward, and also of both radius and ulna outward and backward. To prevent the first dislocation he likes the acute angle splint and he also thinks side splints useful.

Dr. S. J. Mixer showed a new device for the removal of powder grains from the face. It consists of small steel tubes of different sizes. These are

similar to trocar tubes and are partially sharpened. One of proper size is selected and placed on the skin over the site of the powder grain and then it is pressed down so that on removal the skin together with the powder grain is elevated above the surrounding skin. It can then be snipped off with a pair of fine curved scissors and a suture of fine black skin allows the wound to heal by first intention without leaving any scar.

S. N. N.

CINCINNATI LETTER.

(FROM OUR OWN CORRESPONDENT.)

The Association Meeting in May—More Positions for Internes in the Cincinnati Hospital—The Hospital; the Staff—Coalescence of Medical Societies—Fire in the Cincinnati Hospital—Medical College Commencements.

The absorbing topic in medical circles here is the meeting of the American Medical Association in our city in May of this year. We confidently prophesy a very successful meeting, at least so far as the efforts of the local men are concerned. It has been twenty years since we were honored by having the Association meet here, and we therefore wish to make the session a grand success. The various committees are busily engaged pushing forward the work allotted to them. Music Hall and the adjoining rooms have been secured for the meetings. This building is admirably fitted for the general meeting, and also for the meetings of the various Sections.

There will be a banquet tendered the members at our magnificent new Art Museum, at which place the delights of the stomach may be readily combined with those works of art that are so delightful to the eye. Thus we are enabled to obtain a feast of vision and a flow of gastric juice. The following evening will be devoted to a concert given by the Apollo Club, at Music Hall. We can guarantee a hearty and cordial welcome to all, and trust that we may be honored by an unusually large attendance.

The hospital authorities have increased the chances for men to obtain hospital training, by appointing seven externes in addition to the internes already on duty. The applicants for the positions are subjected to a competitive examination. The seven presenting the best papers in all branches are chosen to fill the positions. These examinations are strictly impartial. The Staff not knowing whose paper they examine nor in whose favor they vote. The externes are chosen about the first of October each year, becoming internes upon the 10th of the following April. Thus during the winter months there are fifteen men on duty; seven internes, one senior interne, and seven externes. The new system of appointing externes was inaugurated last Fall, and must still be considered in the nature of an experiment.

The City Hospital is a public institution, capable of holding about 400 patients. The government is vested in a Board of Trustees appointed by the Governor of the State and by the Superior Court. Politicians have never had any influence in the distribution of positions, either medical or executive; conse-

quently the institution has always been well conducted and prosperous.

The Medical Staff of the Hospital consists of four surgeons, four medical men, four obstetricians, two oculists, two pathologists, and four curators and microscopists. The last named are not official positions. The Staff changes every four months; half of the men being on duty at all times. Such men as the following constitute the staff: Drs. N. P. Dandridge, P. S. Conner, E. W. Walker, Jos. Ransohoff, surgeons; Drs. J. A. Murphy, F. Farcheheimer, J. C. Mackenzie and Wm. Carson, are the medical staff. The obstetricians are Drs. W. H. Taylor, Thad. Reamy, C. D. Palmer, and G. M. Allen. The oculists are Drs. Jos. Aub and Rob't Sattler. Pathologists, Drs. Kefler and Eichberg. Drs. Marsh, Cameron, Holmes and Caldwell occupy positions as curators.

Several years ago an agitation arose that resulted in a division in the Academy of Medicine and a new Society was organized. The consequence of the division was that the medical profession of our city has been seriously hampered and crippled by a lack of unity. There has been no assembly that authoritatively represented the opinions of the medical profession as a whole. Two comparatively weak Societies have been holding forth in place of one large, powerful and united brotherhood. Happily, the schism is about at an end. The propriety and feasibility of the amalgamation of the two Societies has been freely discussed, and the general tenor of opinion is decidedly in favor of an early coalescence. The advantages that will arise from such a course are very obvious. We shall be a united, harmonious and truly powerful association; we can speedily obtain a permanent home for ourselves; we can be influential in securing legislation for the good of the public and for our own advancement; and better work can be done.

There has been quite a serious conflagration at the Cincinnati Hospital. The fire originated in a very peculiar manner, but one that it would be well to detail, as other institutions may have similar death-traps for their patients. An elevator formerly run up through a shaft at the south end of the burned pavilion: after the elevator was removed the shaft was divided into compartments through which the dirty clothes, dust, etc., were carried to the basement. Just alongside of this chute, in the first story of the building, was a gas-stove. There had been a leak in the gas-pipe and the gas escaped up this chute to the ventilating space between the ceiling and the roof. A match was applied to the gas-stove, with the effect of igniting the gas which had accumulated in the shaft; an explosion followed, setting fire to the wood-work and largely destroying the entire third floor of the pavilion. The patients all escaped without injury, but their safety was largely due to the efforts of Dr. H. T. Gaylord, an interne, and Mr. Julius Eichberg, the apothecary of the institution. Others deserve great credit for their efforts in rescuing the badly frightened patients, but the above named were on hand at the time of the explosion and therefore had a better opportunity for distinction.

The burned pavilion is the only one that is not

possessed of exits at both ends. As the fire originated near the staircase, the patients were somewhat panic-stricken. The damage to the institution will be immediately repaired, and the previous defects in architecture will be remedied. Five thousand dollars will about cover the amount of damage done.

The medical colleges have had their commencement exercises. An interesting feature of the graduation exercises of the Ohio College was an address delivered by Dr. J. S. Billings, of Washington, D. C., on "A History of the Ohio Medical College before the War." It was a very interesting and pleasant talk, quite out of the line of the ordinary set speeches we are so apt to have inflicted upon us at Commencements. He spoke in eloquent terms of Drs. Graham and Blackman, recently deceased.

J. C. O.

ENORMOUS ENLARGEMENT OF THE HEAD.

Dear Sir:—The following case may be of interest to the readers of THE JOURNAL:

Isham Harris, colored, *æt.* 17. Has been under my observation for 5 years. At the age of 3 months he had an eruption of the scalp lasting 6 months, during which the occiput, parietal and occipito-frontalis bones began to enlarge and have gained the enormous size of 33 inches above the ears, 17½ inches each side right and left from chin to top of head. He is of average intelligence, sews, knits and crochets, has the physical development and face of a 5 years' old child, has not walked any in 7 years, previously having walked on crutches and getting a fall has since refused to make the attempt. His general health is good and has been from infancy. Has slight headache and dizziness when his liver is torpid, otherwise never complains of weight, pain or any unnatural feeling about the head, and weighs 85 pounds. I made a fruitless attempt to get his photograph to present at the International Medical Congress, and have not succeeded at this writing, his mother refusing, stating that she is afraid someone will kidnap him for public exhibition.

R. H. JENKINS, M.D.

Hogansville, Ga.

NATIONAL CONTROL OF QUARANTINE.

Dear Sir:—The editorial in your issue of the 24th inst. entitled "The Bill (H. R. 1526) to Prevent the Introduction of Contagious and Infectious Diseases and to Establish a Bureau of Health," causes me to understand that you have the impression that this is a bill which was introduced through the agency of the committee of the College of Physicians of Philadelphia. I write this, as a member of that committee, for the purpose of removing that impression. The bill you speak of is doubtless one which has been proposed and introduced in accordance with the action of the American Public Health Association, at their last meeting, in advocacy of the establishment of a National Bureau of Health, and the Philadelphia committee have had no connection

with it in any way. The report and the recommendation of our committee were strictly limited to the question of the necessity of *National Control of the Maritime Quarantine*, and the bill embodying the suggestions made in our address to the medical societies of the country has not yet been introduced. May I request that you publish this letter, in order to correct a similar impression which may have been received by others? Very respectfully,

E. O. SHAKESPEARE.

1336 Spruce St., Philadelphia, March 26, 1888.

A CASE OF POST-PARTUM PUERPERAL CONVULSIONS.

Dear Sir:—On February 22, 1888, I was called by her husband to see Mrs. B., *æt.* 24, multipara, whom I found in labor. The labor had advanced to the second stage, and she was delivered in about thirty minutes after my arrival of a well-developed male fetus. The labor was normal in every respect, and there was no hemorrhage nor laceration of cervix or perineum. She had been in good health prior to labor, with the exception of the last three days, during which she had suffered from a very severe throbbing headache. After delivery this headache continued, and about thirty minutes after delivery was completed she suddenly passed into general convulsions. In the course of an hour and a half she had seven very severe convulsive attacks. I sent for counsel at once, which, however, did not reach me until after the convulsions had ceased. Immediately after the first attack passed off I injected hypodermically ½ gr. morphia with ⅔ gr. atropia, which producing no visible effect, in thirty minutes I injected ⅔ gr. morphia with ⅔ gr. atropia, and bled her from the arm to about 12 ozs. After the second injection and the venesection the convulsions were less violent and the intervals longer, but as they had not ceased one hour after the second injection of morphia and atropia, I made an injection of ¼ gr. morphia alone. In a few minutes the convulsions ceased and did not recur. The patient remained in an unconscious state about nine hours after the last convulsion, when she gradually regained consciousness, and has made a good recovery.

The patient is a stout, plethoric woman, and before the venesection the pulse was full, hard and bounding.

C. J. MARCH, M.D.

Whelan Springs, Ark., March 8, 1888.

NECROLOGY.

A. B. STUART, M.D.

Dr. A. B. Stuart died at Santa Rosa, California, on July 30, 1887, aged 57 years.

Dr. Stuart was born at Williamsburg, Pa., on August 27, 1830. He was educated at Lewisburg University, Pa., and entered upon the study of medicine at Berkshire Medical College, Pittsfield, Mass., from which institution he was graduated M.D. in November, 1856. Previous to his graduation he

filled the position of demonstrator of anatomy in that college.

He located in practice in Westhampton, Mass., but in 1858 removed to Macomb, Ill., where he engaged in the duties of his profession until August, 1861, when he entered the army as assistant-surgeon of the 10th regiment Missouri infantry volunteers. In the autumn of 1861, while assisting in the hasty construction of a fort, he was caught between some timbers and sustained an injury producing partial paralysis, from which he never fully recovered. He was on duty with his regiment during the siege of Corinth and the spring campaign of 1862, but owing to severe illness he was sent North in July, 1862. In the month of September he returned to his command and was present at the battles of Iuka and Corinth in September and October of that year. After those battles the Confederate wounded, numbering over 3000, were placed in hospital at Iuka, Miss., under the immediate care of their own surgeons, and Dr. Stuart was put in charge of the whole, by direction of General Rosecrans. He filled the position of medical superintendent of the Iuka hospital until March, 1863, when arrangements were made for the care of the inmates elsewhere.

In April, 1863, he was commissioned Surgeon of the 1st regiment Alabama cavalry volunteers, U. S. (white), and continued in active service with that regiment until January, 1864, when, owing to continued ill health, he resigned his commission, returned North, and some months later resumed practice in Macomb, Ill. In the winter of 1865-6 he attended the regular session of the Bellevue Hospital Medical College, New York, receiving an adenudum degree in March, 1866, from that college.

In June, 1866, he removed to Minnesota, established an office in Winona, and engaged in general practice until July 1, 1876, when he determined to seek a climate better adapted to his impaired health. With this end in view he visited California, and for some years was located at Santa Barbara. In 1880 he removed to Santa Rosa, in that State, which point he selected as a permanent residence. He soon acquired a lucrative practice in his new field, to which he gave his attention to the last day of his life.

During the spring and early summer of 1887 he suffered from occasional seizures of partial paralysis, the effects of which, to some extent, disappeared. On the 30th day of July, 1887, he was stricken with a severe attack of paralysis, from which he never rallied, death occurring on the evening of that day.

Dr. Stuart aided in the formation of the Winona County Medical Society in 1869, and was President of the same in 1872. He was a member of the Massachusetts Medical Society, of the Minnesota State Medical Society from its organization—holding the position of vice-president in 1874 and 1876—of the California Medical Society, and of the American Association, serving, in 1873, as secretary of the section on State Medicine and Hygiene. He served as a delegate from Minnesota to the International Medical Congress which met in Philadelphia in 1876. He was largely instrumental in securing the establishment of the Minnesota State Board of Health,

and was elected president of that body at its first meeting in 1872.

Dr. Stuart, notwithstanding a feeble physical constitution and the vicissitudes attendant upon almost constant ill health, succeeded in accomplishing a large work in his professional career, solely by the aid of that earnest effort and indomitable energy which were manifested in all his undertakings. The later years of his life were saddened by the great affliction arising from the loss of his children. His last bereavement, the death of his daughter Mary, a lovely child of 12 years, which occurred in 1883, was to him a sorrow unrelieved by the lapse of time.

Of his immediate family his widow alone remains, but near the scenes of his childhood an aged father mourns the loss of a most devoted son.

MISCELLANEOUS.

INSTRUCTIONS TO THE MEMBERS OF THE ILLINOIS STATE MEDICAL SOCIETY.—*Dear Doctor:* Through the courtesy of the different Railway Passenger Associations all persons attending the Thirty-Eighth Annual Meeting of the Illinois State Medical Society to be held at Rock Island, Ill., commencing Tuesday, May 15, 1888, will be granted a reduction of a fare and one-third for the round trip, only under the following conditions:

First. Each person must purchase (not more than three days prior to the date of the meeting), a first-class ticket (either unlimited or limited) to the place of meeting, for which he will pay the regular tariff fare, and upon request the ticket agent will issue to him a certificate of such purchase properly filled up and signed by said ticket agent.

Second. If through tickets cannot be procured at the starting point, the person will purchase to the most convenient point where such through tickets can be obtained, and there purchase through to the place of meeting, requesting a certificate properly filled out by the agent at the point where purchase is made.

Third. Tickets for the return journey will be sold by the ticket agents at the place of meeting, at one-third the highest limited fare, only to those holding certificates signed by the ticket agent at point where through ticket to the place of meeting was purchased, and countersigned by the secretary or clerk of the convention, certifying that the holder has been in attendance upon the convention.

Fourth. It is absolutely necessary that a certificate be procured, as it indicates that full fare has been paid for the going journey, and that the person is therefore entitled to the excursion fare returning. It will also determine the route via which the ticket for the return journey should be sold, and without it no reduction will be made, as the rule of the association is that "No refund of fare will be made, on any account whatever, because of failure of the parties to obtain certificates."

Fifth. Tickets for return journey will be furnished only on certificates procured not more than three days before the meeting assemblies, and will be available for continuous passage only; no stop-over privileges being allowed on tickets sold at less than full fares. Certificates will not be honored unless presented within three days after the date of adjournment of the convention.

Sixth. Ticket agents will be instructed that excursion fares will not be available unless the holders of certificates are properly identified, as above described by the secretary or clerk. On the certificate, which identification includes the statement that one hundred or more persons, who have purchased full fare tickets for the going passage, and hold properly receipted certificates, have been in attendance at the meeting.

The certificates are not transferable, and the signature affixed at the starting point, compared with the signature to the receipt, will enable the ticket agent to detect any attempted transfer.

N. B.—Please read carefully the above instructions, be par-

ticular to have the certificates properly filled and certified by the railroad agent from whom you purchase your going ticket to the place of meeting, as the reduction on return will apply only to the point at which such through ticket was purchased.

Yours truly, G. L. FRYER, M.D.
Assistant Secretary.

Rock Island, Ill., March 20, 1888.

SUCCESSFUL DISPOSAL OF GARBAGE AT MILWAUKEE.—Martin, Commissioner of Health, for Milwaukee, writes to the *Sanitary News* of March 10, 1888, reporting the success of the disposal of garbage by cremation, as follows:

Perhaps Milwaukee is not so favorably situated as some of our sister cities for the safe disposal of our refuse material, and that may be one reason why we have been forced to take vigorous measures to consume ours. Other municipalities have entered on a course of experiments involving large sums of money, and will, at the end of these experiments, be no nearer the solution of the problem than when they were first undertaken. With us it is quite different. Last summer we found that fully one-half of our garbage was water that could be, and was, extracted by a powerful press, and as we know of no better or cheaper method of getting rid of this water, than by evaporation, and as we do not expect that garbage like ours will burn without fuel, so our furnace was erected, and every day, for more than five months, our garbage has been consumed to a dry, inodoriferous ash; with us, it is no longer an experiment, but an accomplished fact, that we claim to be the first city that is to-day destroying her refuse material by fire. A test of the cost of consuming the garbage was made on December 27, with the following result: The amount received and consumed was 40,215 pounds, and the fuel required was 5,000 pounds, being 4.3 cents per hundred pounds of garbage consumed, a result highly gratifying when we consider that on that date there was a large quantity of snow and ice mixed with the garbage. This department entered into an agreement for three years with the contractor to burn all garbage delivered at the furnace by order of this office, being that collected by men employed for that work. The wholesale houses, grocers, commission houses, and others of that class, take their refuse to the same place. The contractor is also required to burn all small dead animals, and the furnace is in actual operation during this season, the worst of the whole year, only from eight to ten hours daily.

ANNALES DE LABORATOIRE DE L'HOSPICE DES QUINZE-VINGTS is the name of a new and important periodical for ophthalmologists and pathologists, edited by Drs. Fienzal and Haenell, and published by Delahage and Lecrosnier, of Paris. The editors will issue a series of studies of the pathological material in the Hospice Quinze Vingt, which includes 1,700 enucleated bulbs.

THERAPEUTICS WITHOUT ALCOHOL.—The Temperance Hospital has been in existence now about twelve years, and the annual report for 1886-7 may be studied with advantage in order to compare the results with those of other hospitals. It must not be supposed that the hospital only receives abstainers, though these are in the majority, probably due to the large proportion of infants and children. In the surgical department the results have been very satisfactory, so far as one is enabled to judge from mere figures, but turning to the medical cases, we may restrict examination to one or two groups of disease with advantage. Out of the thirteen cases of acute pneumonia four (abstainers) died, one of them on the fifty-fourth day from exhaustion. Only four cases of typhoid fever were admitted in all, and although the cases were of young people—15, 7, 14 and 35, respectively—and comprised three abstainers, they all proved fatal. The treatment was the same as elsewhere, and the only difference consisted in the non-exhibition of alcohol. Then again, simple exhaustion, eighty-seven days after the onset of the disease, proved fatal in one instance. The average stay of patients in the hospital would seem to show that convalescence is unduly prolonged, and this notwithstanding the fact that the list of cases comprises several of "nasal catarrh" and other trivial complaints. The only occasion on which alcohol was administered was in a case of operation for strangulated hernia, in which death resulted from an unrelieved constriction. Every credit is due to the registrar, Mr. Leopold Hudson, for the clear and practical manner in which he has tabulated and arranged his

figures. We shall look forward with interest to future reports drawn upon the same excellent plan, as it is only by comparing results that medical men will be enabled to judge the merits of treatment without alcohol. Thanks to the impartial summary with which the report opens, it is easy to grasp its general tenor. It constitutes an innovation which other hospitals would do well to copy.—*British Medical Journal*, March 10, 1888.

ANATOMICAL SCIENCE IN THE DISTRICT OF COLUMBIA.—On Monday, March 26, House Bill No. 5040, for the promotion of anatomical science and to prevent the desecration of graves in the District of Columbia, came up for discussion in the House of Representatives. While the discussion on the Bill and amendments to it cover ten pages of the *Congressional Record*, there is nothing remarkable, in one way or the other, about the Bill. It is simply one providing that the unclaimed dead in public institutions, and the bodies of such persons as, unclaimed, did not request burial, should be turned over to the medical colleges of the District of Columbia for dissection, and providing for the punishment of body-snatching. The Bill and the objections made to it by members of the House will be considered next week.

ROLL OF PERMANENT MEMBERS.—Dr. D. W. Harrington, of Buffalo, N. Y., became a member of the American Medical Association in 1857. Dr. J. H. Quinn, Blue Springs, Neb., became a member in 1856. These names were accidentally omitted from the triennial list of members as published in THE JOURNAL of December 31, 1887.

THE WEST VIRGINIA STATE MEDICAL SOCIETY will hold its twenty-first annual session at Huntington, W. Va., on May 16, 17 and 18, 1888. A full meeting is expected. For further information apply to J. L. Fullerton, M.D., Secretary, Charleston, W. Va.

LA SEMANA MEDICA is the title of a new journal published in Havana on the 7, 14, 21, and 28 of each month, and edited by Dr. T. Garcia.

DONA DR. MATILDE MONTVOYA is the first woman to receive the degree of M.D. in the Mexican Republic.

DR. GARRE, of Basle, has been appointed Professor at Tübingen.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MARCH 17, 1888, TO MARCH 23, 1888.

Col. J. H. Baxter, Chief Medical Purveyor, will proceed to Augusta Arsenal, Ga., on public business. S. O. 62, A. G. O., March 10, 1888.

Major Chas. R. Greenleaf, Surgeon, will proceed to Cambridge, Mass., on official business. S. O. 62, A. G. O., March 10, 1888.

Major W. H. Forwood, Surgeon, granted one month's leave. S. O. 20, Dept. Dak., March 10, 1888.

Major H. E. Brown, Surgeon, assigned to temporary duty at Ft. Barrancas, Fla., during the absence on leave of Asst. Surgeon M. C. Wyeth. On the return to duty of Capt. Wyeth, Major Brown will regain his proper station. S. O. 65, A. G. O., March 20, 1888.

Major R. M. O'Reilly, Surgeon, will proceed to York, Pa., and make an examination of Capt. Edw. B. Rhum, Twenty-first Inf. S. O. 62, A. G. O., March 10, 1888.

Capt. J. C. Worthington, Asst. Surgeon, granted leave of absence for four months, to take effect May 15, or as soon thereafter as his services can be spared. S. O. 65, A. G. O., March 20, 1888.

Capt. M. C. Wyeth, Asst. Surgeon, granted leave of absence for two months, to take effect about April 1. S. O. 65, A. G. O., March 20, 1888.

First Lieut. Wm. D. Crosby, Asst. Surgeon, granted leave of absence for two months, with permission to apply for an extension of one month, to take effect after being ordered to a new station. S. O. 60, A. G. O., March 14, 1888.

THE

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CHICAGO, APRIL 7, 1888.

No. 14.

ORIGINAL ARTICLES.

CÆSAREAN SECTION, WITH REPORT OF A CASE AND A FULL DESCRIPTION OF THE "SÆNGER OPERATION."

*Read before the Cincinnati Academy of Medicine, January
30, 1888.*

BY GUSTAV ZINKE, M.D.,
OF CINCINNATI, OHIO.

ASSISTANT TO THE CHAIR OF OBSTETRICS AND DISEASES OF WOMEN IN
THE MEDICAL COLLEGE OF OHIO; PRESIDENT OF THE CIN-
CINNATI OBSTETRICAL SOCIETY, ETC.

March 17, 1887, at 8.30 A.M., I was called in consultation by Dr. Adolph Grimm to see Mrs. G., an Austrian by birth, aged 23, primipara. She had been in labor thirty six hours, under the care of a midwife. Dr. Grimm had been summoned about two hours prior to my arrival. He found the pelvis contracted, the os dilated, the head in first position and above the brim. He had made several attempts at delivery with the forceps, but without success.

The patient occupied a small room in one of the crowded tenement districts, the usual surroundings of which are well-known to every practitioner of experience. The patient was a dwarfed, pale brunette, fifty-one and three-fourth inches tall; thirty inches from vertex to tip of coccyx. The lower limbs were abnormally small and knock-kneed; the sacrum joined the lumbar vertebrae almost at right angles; she was tolerably well nourished. Her face was pale, and wore an anxious expression; her skin was cold and clammy; the abdomen tympanitic, and tender to the touch. She complained of constant severe pain in the pelvis, and supra-pubic region, which became almost intolerable during the contraction of the uterus. Temp. 100°, pulse 110. Fetal heart was distinctly heard to the left of the median line, on a level with the umbilicus. Digital examination revealed a swollen, livid vulva and vagina; a fully dilated, but thick and flabby cervix. The head of the child rested (occiput to the left) transversely above the superior straight. Deformity of the pelvis was at once apparent from the position of the sacrum, the coccyx being buried in the bed clothes, and the hand of the examiner being allowed to pass easily under the back of the patient. The promontory could be felt without difficulty. The middle of the first phalanx of my right index finger being firmly fixed against the lower border of the symphysis pubis, permitted the tip of the same finger to rest

against the promontory of the sacrum, a distance of about three inches (see Plate xvi, Fig. c). Thus, according to ordinary calculation, the conjugate diameter at the brim could not be more than two and one-fourth inches. The oblique and transverse diameters of the inlet could not be exactly determined, though at the time it seemed possible that delivery might be effected *per vias naturales*. The forceps were again applied, and an effort made to fix the blades to the sides of the child's head, but failing in this, the head was grasped over the face and occiput. With each pain, steady and firm traction was made. A few minutes served to convince me that it was impossible to deliver the child alive through the natural channel. One of two things had to be done: Mutilation of the child, or Cæsarean Section. The former would have been resorted to had the child been dead. To destroy the infant and effect delivery, with the soft parts of the mother in an already swollen and tender condition, did not seem justifiable to us, because, it might have resulted in the laceration of the organs, to a greater or less degree. Circumstances called for immediate action. Whatever was to be done, had to be done at once. To resort to craniotomy was to sacrifice the life of the infant, while it would not have materially enhanced the mother's chances of life. Hysterotomy, I felt reasonably certain, would save the infant at least, while at the same time it did not deprive the mother of all hope of recovery. Therefore it was determined to resort to Cæsarean Section.

The operation was performed at 10 A.M. of the same day, Drs. A. Grimm and B. Zinke assisting; the husband and midwife were also present. The patient was placed upon a table opposite a window. The temperature of the room was kept at about 90° F. throughout the operation. Dr. B. Zinke administered the chloroform, after $\frac{1}{4}$ gr. morph. sulph. had been given subcutaneously. Abdomen, vulva and upper portions of both thighs were then washed with soap and hot water, instruments and sponges were treated antiseptically. Hands of operator and assistants were cleansed thoroughly.

The woman being anesthetized, I made a five and one-half inch incision in the median line of the body, midway between the umbilicus and mons veneris. Before opening the womb all hæmorrhage was stopped. Dr. Grimm then placed his hands upon the abdomen, surrounding as much as possible the opening made, and gently, but firmly, pressed the abdominal parietes against the uterus. The point

selected for the incision in the womb was also in the median line. The position of the child could be easily outlined by running the tip of the finger over the exposed portion of the womb, and from this palpation I was satisfied that the placenta was not attached thereto. Membranes had ruptured many hours previously; the uterine walls, when not contracted, were flaccid. The point chosen for the incision was the median line of the uterus about midway between the fundus and neck of the uterus. A small opening was at first made into the womb (in the upper portion) with an ordinary scalpel. Through this, a curved, blunt-pointed bistoury was introduced and the opening carefully but rapidly enlarged to about four and one-half inches. There was profuse, but not excessive hemorrhage, Dr. Grimm dextrously preventing it, and the remaining amniotic fluid from entering the abdominal cavity.

The extraction of the child was the work of a few seconds only. The right arm from elbow to shoulder was presented in the cut of the womb. Taking hold of the arm gentle traction at once assured me that delivery could not be effected in this manner without running the risk of tearing the uterus. In attempting to deliver it by the feet, the same difficulty presented itself. I then inserted my left hand (standing to the left of the patient) through the lower angle of the wound, and pushed it downward between the anterior wall of the womb, and the right side of the head over the vertex. Then tilting the head of the child upward and forward, it was easily guided through the opening and delivered. It proved to be a full grown, healthy child.

The womb contracted immediately and hemorrhage amounted to but little thereafter. At this time the patient was pale; the pulse perceptible, but very weak; her breathing was unembarrassed. The cord, after being tied and severed, was carried through the incision in the uterine cavity through the cervix, brought out at the vulva, and the placenta delivered per os and vaginam. While thus exposed, the uterus was observed to pass through several regular contractions. I intended to close the opening in the womb with a continued carbolized catgut suture, but when this was nearly finished, the suture broke in several places and consequently had to be abandoned. I then resorted to the interrupted carbolized silk suture, eight stitches being introduced.

Inspection and Cleansing of the Peritoneal Cavity.—The intestines had not been exposed. Although, several small, soft and thoroughly prepared sponges were dipped down deeply all around the uterus, nothing but the merest trace of blood could be found. When satisfied that the abdominal and pelvic cavities were clean, and that there was no oozing anywhere, the

Abdominal Wound was closed by eight heavy silk sutures. A strip of lint, dipped in carbolized oil was placed over the wound. The rest of the dressing consisted of a layer of absorbent cotton and a moderately tight abdominal bandage. The time elapsed, from the giving of the anæsthetic to this point was one and one-half hours. This may be divided as follows:

For anæsthetic, about	20 min.
" abdominal incision and stopping of hemorrhage, about	7 "
" uterine incision, delivery of child, and tying cord, about	3 "
" guiding the cord through the cervix, vagina, and out of the vulva: sewing up the uterine wound and the delivery of the placenta, about	35 "
" cleansing the abdominal and pelvic cavities respectively, sewing up the abdominal incisions and dressing the wound and the patient,	25 "
Total,	90 "

COURSE AND TREATMENT.

1st Day.—2 P.M. Two hours after the operation patient suffered slight pain in the wound. Pulse 120. Temp. 101 $\frac{1}{2}$ °. Resp. normal. $\frac{1}{4}$ gr. morph. sulph. subcutaneously. Ice bag placed over the dressing. 5 P.M. Temp. 101 $\frac{1}{2}$ °. Pulse 120, strong and full; patient felt comfortable. Two drops of tr. ver. vir. were given every 2 hours and morphine in $\frac{1}{4}$ gr. doses per os every 2-3 hours when required.

7 P.M. Pulse and temperature the same. No pain.

12 P.M. Pulse 132. Temp. 102°. No pain.

2d Day.—9 A.M. Pulse 132. Temp. 100 $\frac{1}{4}$ °. No pain. Patient vomited several times during the night. Morphia per os discontinued.

12 M. Pulse 132. Temp. 100 $\frac{1}{2}$ °. No pain.

6 P.M. Pulse 136. Temp. 100 $\frac{1}{2}$ °. Pain in pelvic region; abdomen slightly distended. Morph. sulph. gr. $\frac{1}{4}$ hypodermically.

12 P.M. Pulse 132. Temp. 101°. $\frac{1}{4}$ gr. morph. sulph. subcutaneously.

3d Day.—9 A.M. Pulse 108. Temp. 101 $\frac{3}{4}$ °. Slight spasmodic pains over the lower portion of abdomen, apparently due to uterine contractions. No tympanitis. Tr. ver. vir. discontinued and $\frac{1}{4}$ gr. morphia given hypodermically.

12 M. Pulse 120. Temp. 102 $\frac{1}{4}$ °. Patient comfortable; tr. ver. vir. was again ordered to be given hourly, in 2 drop doses on account of increased pulse rate.

5 P.M. Pulse 120. Temp. 102°. Slight pain in supra-pubic region. Lochia somewhat offensive and irritating in character. Vaginal irrigations with carbolized warm water. Abdominal dressing changed for the first time, and wound found to have united by first intention. No tympanitis. $\frac{1}{4}$ gr. morphia subcutaneously.

12 P.M. Pulse 120. Temp. 100 $\frac{1}{4}$ °. Patient suffering slight pain. Another injection of $\frac{1}{4}$ gr. of morphia.

4th Day.—9 A.M. Pulse 120. Temp. 100 $\frac{3}{4}$ °. Increased pain, slight distension of abdomen. Genital tract irrigated and morph. sulph. $\frac{1}{4}$ gr. hypodermically.

5 P.M. Pulse 136. Temp. 102 $\frac{1}{4}$ °. Feels hot, very thirsty and restless. No pain.

10 P.M. Pulse 140. Temp. 99 $\frac{3}{4}$ °. Patient felt comfortable; no pain; abdomen not distended.

5th Day.—2 A.M. Patient seized with severe vomiting and thereafter complained of great pain in lower half of abdominal, and entire pelvic region.

9 A.M. Pulse 160. Temp. 103°.

Digital examination of genital tract revealed great

tenderness of the uterus and its surroundings, with slight edema and partial fixation of the womb. Removal of abdominal dressing showed no marked tympanites. While the union throughout the incision was perfect, distinct spots of redness were found around the points where the sutures entered the integument. Lest this might prove a source of irritation, all the sutures were removed and the abdomen supported by long strips of rubber adhesive plaster, an inch broad, and an abdominal bandage placed over it as before, and the vagina again irrigated.

Antifebrin, gr. x. and morph. sulph. $\frac{1}{4}$ gr., were then administered.

5 P.M. Pulse 140. Temp. $100\frac{3}{4}$.

12 M. Pulse 156. Temp. $102\frac{1}{2}$. The patient restless, slightly delirious. Increased tympanites and tenderness over abdomen.

6th Day.—9 A.M. Pulse 156. Temp. $102\frac{3}{4}$. General condition unchanged. Antipyrin, gr. x. morph. $\frac{1}{4}$ gr.

5 P.M. Pulse 160. Temp. $102\frac{3}{4}$. The patient had become semi-conscious, while her strength was rapidly failing. Whiskey administered hypodermically, using xxx ℥. every two hours.

12 P.M. Pulse 160. Temp. $103\frac{1}{2}$. Tympanites much increased; delirious; no pain, but very restless; whiskey, xxx ℥. every hour, hypodermically.

7th Day.—8 A.M. Severity of all symptoms augmented. Pulse 160. Temp. $104\frac{1}{2}$. Abdomen greatly distended but wound still intact. Patient semi-conscious. No pain, but much depressed and exhausted. During the last few hours she suffered intensely from dyspnoea, which caused great restlessness and tossing about.

2 P.M. She died from the combined effects of peritonitis, dyspnoea and asthenia. (See Plate xvii.)

The ice-bag was kept on the abdomen for nearly three days, during which time it seemed to have a favorable effect upon the patient, after that it was a source of discomfort, and therefore it was discontinued and warm flannel substituted. In the beginning the diet was mild; later, more nourishing and concentrated food was given, in so far as it agreed with the patient's stomach.

The following diet was maintained: Milk, mutton, beef and chicken broths, toast, the juice of broiled beef, port wine, and at one time a little beer was given to satisfy a strong craving for it. In the absence of any desire for food and the repeated attacks of vomiting the nourishment she received in the aggregate amounted to very little.

Post-mortem Examination was held the following morning in the presence of Drs. C. D. Palmer, Ed. Walker, Adolph Grimm, Bruno Zinke and Thomas Hays.

Rigidity not very well marked; body in good state of preservation; features pinched and sunken; integument not discolored; abdominal walls enormously distended; wound gaping in the central portion to the extent of two and a half inches, a condition discovered only post-mortem, and which must have occurred shortly before or after death, and was no doubt caused by the patient's extreme restlessness

and throwing herself from side to side during the final struggle.

The abdominal contents were held in place by a firm thick band of adhesion which had formed along the inner surface of the abdominal wall for more than an inch on each side and beyond the extremities of the incision, matting the omentum, uterus and bowels to the inner surface of the anterior abdominal walls.

The cut was then enlarged to the sternum above and symphysis below. The intestines, distended with gas, showed a diffuse peritonitis, adhering universally to each other, to all the adjoining viscera and abdominal parieties, with the exception of the lower two-thirds of the uterus, the bladder, and the true pelvic cavity. Having removed the intestines, the liver, spleen and kidneys were found to be normal. The body of the womb, high up above the brim, was bent upon the lower lumbar vertebrae, over the promontory of the sacrum, and measured about seven inches in its vertical, and five inches in its greatest transverse diameter. The walls at the upper third, where its transverse diameter was greatest, showed an inch thickness, except in the proximity of the incision. Here they tapered off from the inner to the outer surface, which was apparently due to sloughing. All along this wound from the peritoneal surface, half way through the parenchyma of the womb, the union seemed to be perfect. On examining this wound with great care, it was found that the union had not been effected along the entire tract of the incision. A space of about a quarter of an inch, corresponding to the upper suture, had failed to unite. There was no communication, however, between the uterine and peritoneal cavity; this being rendered impossible by the adhesion of this section of the womb to the abdominal wall in front. The remainder of the surface of the uterus and its appendages were smooth, but marked with indentations by surrounding structures. It was also greatly discolored, almost black, especially so at the inferior half, and both the ovaries.

The pelvic peritoneum had the same appearance. The upper half of the body of the uterus had a yellow, greenish tint. There was no fluid pus present anywhere, nor adhesions between the pelvic viscera and pelvic peritoneum. But there was to be seen a peculiar curdled, cream-like, non-adhesive pus, distributed in spots, or islands, upon the pelvic viscera and the peritoneal lining of the pelvic cavity. The uterus and appendages having been removed the following were the

Diameters of the pelvis at the superior strait. For convenience of comparison, I have placed them alongside of the average normal diameter.

In this Patient.		Natural Average Diameter.	
Conjugate diameter, ..	2½ in.	Conjugate diameter, ..	4½ in.
Transverse " ..	4½ "	Transverse " ..	5½ "
R. oblique " ..	3½ "	R. oblique " ..	5 "
L. " " " ..	3½ "	L. " " " ..	5 "

(See Plate xvi, Fig. A, E, and F.)

The diameters of the inferior strait and of those within the pelvis could not be taken with any degree of accuracy, though I believe that could the head have been made to pass the brim the rest of the cavity

would have offered no very great obstruction to the delivery of the child.

REMARKS.

1. Was Cesarean Section indicated in this case?
2. Was an operation justifiable at the time and place and under the circumstances under which it was performed?

In this country 2 inches, in Germany, France, and other European countries 2.73 inches and less, of the conjugate diameter, at the brim, is considered the limit at which hysterotomy may be resorted to with perfect propriety, provided the infant still lives, and that the pelvis is not so distorted as to permit the passage of the head to one or the other side of the conjugate. In other words, contraction of the antero-posterior diameter alone, is not to be considered a sufficient cause for the performance of the operation. I must confess that in this case I believed, prior to the operation, that the conjugate at the upper strait was not more than 2 or 2½ inches. The transverse and oblique diameters at the brim, though likewise only approximately determined, were recognized as less than normal in size. Notwithstanding, I believed myself justified in making another attempt to deliver the child with forceps, for it still seemed to me possible that a small child might be made to traverse this contracted pelvis. The introduction of the forceps was not attended by any great difficulty. Locking the instruments was not so easily accomplished. The blades grasped the head over the face and occiput. It was impossible to apply them over the sides, and hence was not persisted in. Then gentle, later firm, and finally severe traction was made with each pain, but not the least progress effected.

What was then to be done? I believe with the majority that it is wiser and more humane to spare the life of the mother though the child is sacrificed, if by so doing her life can be saved with any degree of certainty. This, however, was not possible in the instance just cited. All things being well considered, hysterotomy was determined upon, and performed in the presence of the gentlemen mentioned. To have abandoned the case entirely, or to have had her removed to more sanitary quarters would have been cowardly, to say the least, and would have resulted in the immediate death of both the parent and child.

For these reasons, with Dr. Grimms' consent, I assumed all the responsibility of the case.

To what may the fatal issue in this case be attributed? The causes operative in the result obtained may be summed up as follows:

1. Long delayed and exhaustive labor.
2. Repeated unsuccessful attempts to deliver with forceps.
3. Bad hygienic surroundings of patient.
4. Shock of operation.
5. Vomiting and inability to retain sufficient nourishment.
6. Development of general peritonitis.

The operation was executed carefully and antiseptically with no mishaps, excepting the tearing of the carbolized catgut suture. The child was saved

but the mother died on the seventh day. That she lived so long is undoubtedly due to the great care and unremitting attention which Dr. Grimm bestowed upon her.

In this connection it may be proper to state that in this operation, as well as in any other so called capital surgical procedure, a certain amount of practical experience in the performance of the operation itself is absolutely necessary to success. But where, it may be asked, is a practical experience in Cesarean section to be acquired? It would seem that this country offers very limited opportunity for this special practice. This is true also of all other obstetric operations. The fearful death-rate attending hysterotomy in this country, as manifested by the following statistics of R. B. Harris, may be directly traced to the meagre obstetrical resources that this country furnishes, as well as to the consequent inadequate teaching of midwifery by its medical schools. Where the teaching of obstetrics is most thorough, practically, Cesarean section has been oftenest successfully performed. "Germany," as Harris says, "takes the premium," while America shows the lowest per cent. of recoveries. This fact will remain so long as the teaching of practical midwifery remains more or less a strange one to the profession of this broad land.

THE IMPROVED CÆSAREAN SECTION.

Considerable improvement has been made by Sænger in the operative technique of hysterotomy, when compared with the so-called classical operation. Not that he himself has discovered the various procedures of the different and successive steps in his new method of operating—he makes no such claim—but by careful study, painstaking observation, research and experiments, he has been able to formulate a method that bids fair to create a revolution in operative obstetrics. Strange as it may seem, prior to 1887 English and American medical literature was almost silent on this subject; and Sænger's book, published in 1882, has received little or almost no attention from the English speaking profession. Parvin (*Science and Art of Obstetrics*, '86) quotes an account derived chiefly from Potacki (*Annales de Gynécologie*, 1886). It is a faithful description of the Sænger operation, but contains no drawing showing the manner of introducing the uterine suture. Lusk (*Science and Art of Midwifery*) is the only recent author who makes an attempt to illustrate the manner of undermining the peritoneum and of resecting the muscular tissue. We find a full though not altogether very clear description of this operation in Charpentier (Grandin *Encyclopedia of Obstetrics and Gynecology*, 1887). But I know of nothing that brought the suggestions of Sænger more thoroughly before the profession of this country than the rich and spicy "Sænger-Garrigue controversy" concerning the claims and merits of the former, whose name the operation now bears; and which resulted in victory on the other, and defeat on this side of the Atlantic. The wonderful results achieved through the labor of Sænger and his followers, Leopold, Crede, Gussierow, and others, cannot fail to

challenge attention wherever they are known. In view of the fact that the subject of

The *New Cæsarean Section, or Sænger Operation*, has received no attention from this Academy, and because I am convinced that henceforth it will, or at least should, become a more frequent and successful, not a last and futile resort, to save the life of the lying-in and her offspring, I have concluded to furnish a detailed description of the same.

I translate from an essay by Sænger, delivered at Munich, 1886, before Der Deutschen Gesellschaft fuer Gynæcologie:

"1. *Preparations.* No peculiar instruments other than those which every physician should have in his possession, are necessary. They may be disinfected with carbolic solution, while both patient and operator employ bichloride for this purpose. Thorough disinfection of the shaved abdomen, of the external genitalia, vagina, even of the neck, are essential to success. Sponges are not absolutely necessary. Cotton-wads dipped in solution of sublimate, carbolic acid, or chlorine water, as well as napkins of sublimate gauze, mull, etc., may be substituted. Besides the nurse, who is to take care of the infant, two persons are requisite for assistance. The anæsthetic may, in case of necessity, be trusted to a layman.

"2. *Abdominal Incision* should always be in the linea alba and in a manner corresponding exactly to the anterior median section of the uterus. The umbilicus need not be avoided. Hemostatic forceps and the introduction of provisional sutures for the purpose of subsequently drawing the incision together are not essential. Eventration of the unopened womb is not advisable, because it necessitates enlargement of the abdominal incision and renders intestinal prolapse more liable, unless one desires to be quite sure (in the absence of sufficient assistance) that none of the uterine contents escape into the abdominal cavity.

"3. *Uterine incision, in situ*, is made in the median line midway between the fundus and lower segment of the uterus; the latter, especially, should be avoided, and may be recognized by the loose attachment of its peritoneum. By placenta *prævia Cæsaria*, the placenta should be either quickly cut through or detached on one side. Delivery of the child is accomplished in the best and quickest manner by the feet. If the head be retained, wait a short time only if this be due to contraction of the uterus; if relaxation does not occur soon, or if the incision be too small, elongate the same with button-pointed scissors.

"4. *Eventration of the uterus* is effected during the extraction of the child, it being bent forward and the abdominal wall quickly pressed together behind it. If the assistant has kept the latter all this time intimately in contact with the womb, neither blood nor uterine contents can find their way into the abdominal cavity.

"The bowels may now be protected with an antiseptic cloth, the uterus then rests upon another and is partly covered thereby. For the purpose of arresting hemorrhage from the womb, compression by hand, or torsion of the organ in its long axis, may be substituted in the absence of rubber tubing. Eventration and the bending forward of the empty uterus,

as well as retraction and contraction of the same, have already served to lessen the loss of blood materially. The afterbirth is to be carefully detached manually, the perviousness of the os examined, and the inner surface of the uterus rendered smooth. The uterine cavity need not, under ordinary aseptic conditions, be disinfected, though one can introduce some iodoform, and also, until the deep sutures have been inserted, a sponge or a few strips of antiseptic gauze.

"5. *Sutures.* In the interest of simplicity, it is not necessary to undermine the serosa, bending in of the same after fissuring it laterally, nor to resect the muscularis, unless there exists strong outward retraction of the peritoneum, broad exposure of the muscularis, bow-shaped condition of the angles of the incision and irregular, rugged borders of the wound; then, of course, the latter must be rendered even and parallel, and the peritoneal edges must be brought inwardly so as to be in apposition.

"The principal point in the treatment of the uterine wound is the close (enge) double suture. Soft silver wire is best suited for the deep stitches; they should seize both peritoneum and parenchyma broadly, but leave the decidua free; the point of entrance and exit of the needle should be about 1 cm. from the margin of the incision; 8-10 deep sutures are sufficient. After these sutures have been introduced, tightened and shortened, a great number (16 to 30) of superficial, serous sutures are so inserted that each peritoneal border of the opening is perforated twice, after the manner of Lembert. (See Plate ii, Figs. 1 and 2.) If silver wire be not at hand, strong aseptic silk may be employed.

"6. The final acts in the operation consist in the bending of the wire ends upon themselves; in case of bleeding, after removal of the tourniquet, from the line of incision or suture wounds, the introduction of stitches for the purpose of controlling the same; washing of the uterus with a strong antiseptic solution (sublimate, 0.5 per cent.), iodoforming the suture line, previously rendered entirely dry, and lowering of the uterus into the abdominal cavity. A toilette of the latter will then only be necessary if fluids have found their way into it, which may be easily avoided. The abdominal wound is to be closed without drainage, with silk button sutures (Seiden-Knopfnæthe). The line of incision is iodoformed, over which a thin adhesive plaster dressing is applied. As soon as the patient is placed in bed, an ice-bag is placed upon the abdomen and several injections of ergot should be made.

"7. The after treatment should be as inactive as possible."

The Academy, I trust, will pardon the presentation of this lengthy translation from Sænger's essay. There are two reasons, however, for doing so. One is to do justice, if possible, to Dr. Sænger; the other is to bring the subject before you in an unadulterated form, without omissions, restrictions or criticisms.

Though it is five years since Sænger published his book ("*Der Kaiserschnitt bei Uterusfibromen nebst vergleichender Methodik der Sectio Cæsaria und der Porro-Operation. Kritiken, Studien und Vorschläge*"),

zur Verbesserung des Kaiserschnitts"), very little, as stated before, was heard of it in this country until the journalistic controversy of last summer between Dr. Sänger and Dr. Henry J. Garrigues. Sänger writes, and that with justice: "I regret most deeply that my book on Cæsarean section is so little known, especially among English-speaking physicians." No other act of Garrigues' could have added so much to the name and fame of Sänger, and brought the "Improved Cæsarean Section" at once so thoroughly and so broadly to the attention of the reading profession of this continent.

This is not the time or place, nor is it essential on this occasion, to cite from or sit in judgment upon this controversy. He who will take the pains to read it will, and those who have read it believe Sänger to be justly entitled to all to which he lays claim. The Sänger operation has been performed a number of times since then by several prominent obstetricians of this country, and the results (not yet published in detail) are very promising.

Permit me to tax your patience a moment longer, while I present to you the most recent statistics sent me by Dr. Sänger and Dr. Robt. P. Harris. The work done by the latter in this field will, I fear, never be fully appreciated by the profession. He wrote me September 30, 1887:

"There have been 73 cases of Cæsarean operation, including your own, in the State of Ohio, resulting in the saving of 9 women and 6 children. One child lived only a week (mother saved), and another two days (mother lost). There was a fatal case in Columbus in 1886, of which I trust you will be able to get the particulars, as I have not.

"Operations in the United States, as far as known,.....	155
Of these there have not been published,.....	65
" " " " been women saved,.....	57
" " " " " lost,.....	98
" " " " children saved,.....	57
" " " " " lost,.....	98

"There were 3 operations last spring, saving 1 woman and 3 children. Of 10 hospital operations, 9 have ended fatally. In 1885 there were 5 operations in the United States, saving 1 woman and 1 child; in 1886 there were 4, saving 1 child only.

"The Sänger operations of 1886 saved 18 women and 22 children, under 22 operations and 16 operators, in six countries. I have records of 66 Sänger cases, not all complete as yet; 17 died out of 58. About 72 per cent. have been saved. Germany takes the premium."

December 15, 1887, he again writes: "Since the last of March there have been 9 Cæsarean operations, 5 of them since September 1, in this country. Four women are well, and 2 more may recover. All 9 children were extracted alive—1 died directly, and 1 of tetanus in thirty-six hours."

Sänger writes to me under date of October 21, 1887, that the statistics of his "own Cæsarean" section kept by himself furnish, up to the present, 76 cases, of which were saved 58, or 76.3 per cent; lost, 18, or 28.7 per cent.

Of these, 52 cases were operated upon in Germany, with 46 recoveries, 88.4 per cent., with 6 fatal results,

or 11.6 per cent. If I understood Prof. C. D. Palmer correctly in his lecture the other day, Leopold, who has performed the operation the greatest number of times, has obtained a favorable result in over 90 per cent.

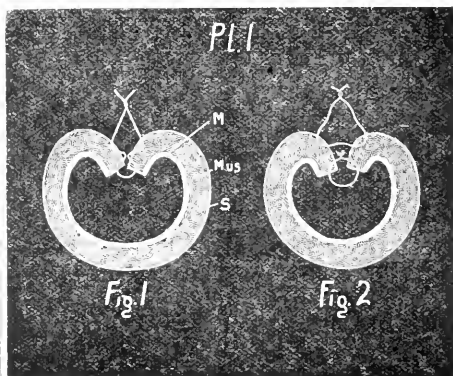


Plate I.—Fig. 1, Gussenbauer's intestinal suture. Fig. 2, Czerny's intestinal suture.

These are remarkable results, and the questions that present themselves are:

1. *Are these favorable results solely due to the manner in which the uterus is sutured?* Certainly not. But this seroso-serous suture, by bringing the peritoneal edges of the uterine wound into intimate apposition, creates a degree of safety never attained before and, in connection with asepsis, more experience and

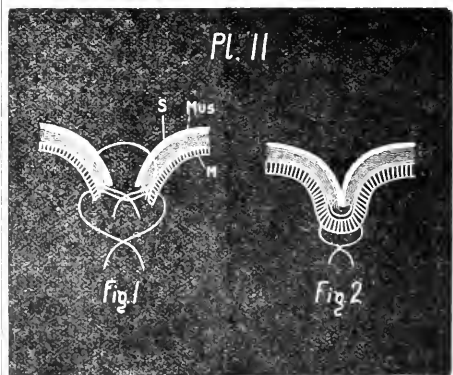


Plate II.—Fig. 1, Woelfler's intestinal suture before, and Fig. 2 after, closure.

greater skill, encourages an early operation, to all of which the remarkable record of successful cases may be attributed.

2. *Are the curtailed indications for Cæsarean section as taught and upheld heretofore, still binding? or have we a right to be more liberal, and increase the sphere of usefulness of this capital operation?*

Naegle and Greuser have divided the indications into:

1. *Absolute*, or when the fetus cannot be delivered through the pelvis living or dead; and
2. *Relative*, or when the fetus cannot be delivered at term without mutilation, and when we have to choose between cephalotripsy, embryotomy and Cæsaræan section.

and since the conjugate diameter at the brim has been made the special indicator for the justification of hysterotomy, I will cite the opinion of a few of the most prominent authors (older as well as more recent), to show how widely they differ:

Batelleau.....	2	3
Jacquemont.....	2	3
Caesareus.....	1	65
Tarnier.....	1	95
Depaul.....	2	34
Guenot.....	1	59
Joulin.....	1	59
Michaelis.....	1	83
Sanzoni.....	3	12
Naegle and Greuser.....	2	51
Spiegelberg.....	1	5
Barnes.....	1	4
Playfair.....	1	4
Heveraux.....	1	5
Huvert de Louvain.....	2	73

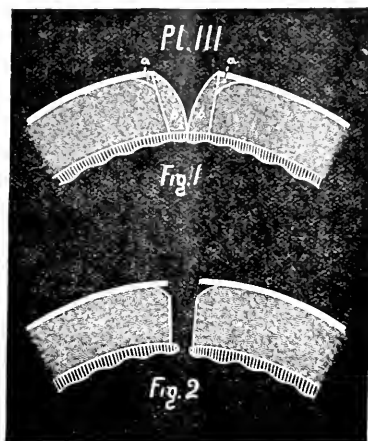


Plate III.—Uterine wound. Fig. 1 before, and Fig. 2 after, resection of the parenchyma and the undermining of the peritoneal covering in womb.

Thus the absolute indications are well enough defined. The relative signs, however, remain to be determined, for it is here that authors differ widely,

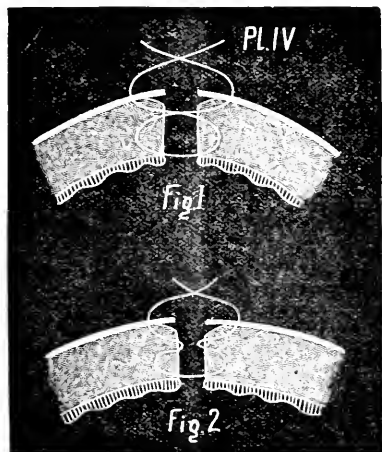


Plate IV.—Fig. 2, a suture analogous to that of Gussenbauer. Plate 1, Fig. 1). Fig. 1, the same, but sutures crossing each other.

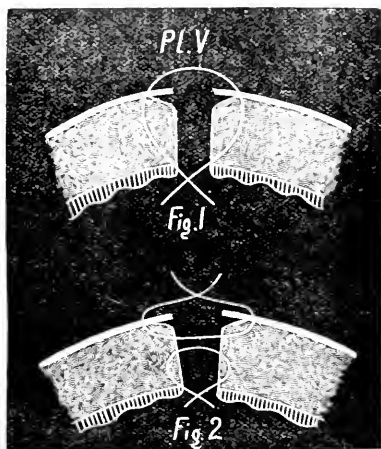


Plate V.—Figs. 1 and 2, a suture analogous to that of Woeifler. Plate 11, Figs. 1 and 2; only applicable so far as it is possible to tie through the incision.

The fearful mortality attending Cæsaræan section, and the more favorable results obtained by embryotomy, and especially by Pajot's method of cephalotripsy without traction, have justly induced the obstetricians to resort to these measures in preference to cutting through the abdomen. But in the light of the present glorious achievements by the Sanger operation, these figures may well be changed, and I would not be surprised, indeed I believe it quite justifiable, that a three-inch conjugate (and probably more if you please) an impacted head or shoulder presentation in which the child still lives and turning is impossible, excessive size of fetus, malpresentation, tumors not operable, certain cases of osteo-malacia, and other congenital or constitutional vices which doom the woman to death, Sanger's improved operation will be adopted by those well acquainted with and experienced in his method. In speaking of the success of Sanger's operation, (Par-

vin, *Science and Art of Obstetrics*, 86, p. 662) says: "Now if such success could be obtained by practitioners generally, ovariectomy upon the living fetus would soon be unknown." Continuing (page 664): "We may justly hope that its extension will rapidly grow, and that it will meet with corresponding success."

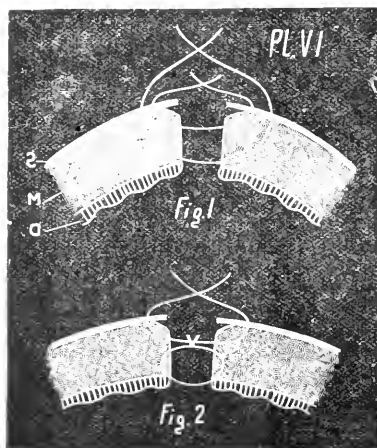
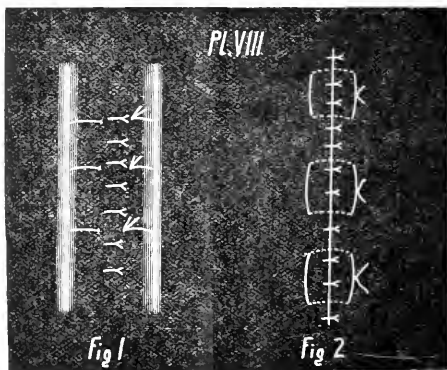


Plate VI.—Fig. 1, a double row button-suture; the deep seizes the whole uterine wall, excepting the decidua; the superficial is intended only for the peritoneal coat. Fig. 2, a suture analogous to Czerny (Plate I, Fig. 3), and the story suture (Engelmann) of Schröder; the deep unites the muscularis, the superficial the peritoneum. S, peritoneum; M, parenchyma; D, decidua.

management. Jacques Nufer, a swine herdsman, performed it on his own wife, successfully, in 1500. Sanger cites numerous cases in which the abdomen and womb were opened in the most bungling manner by careless and incompetent hands, and recovery took place. R. P. Harris published several instances (*Am. Jour. Obstetrics*, last volume) of "cattle horn" cases, in which the foeti were torn from the womb and the mothers recovered. In our own State, the statistics of whose operation are poor, Lungren



(See Plate VII, Fig. 2.)

(See Plate VII, Fig. 1.)

collected 13 cases (3 of his own), with 9 maternal recoveries and 8 living infants. Two of his operations were performed on the same woman, who still lives with both of her Cæsaean children. He is

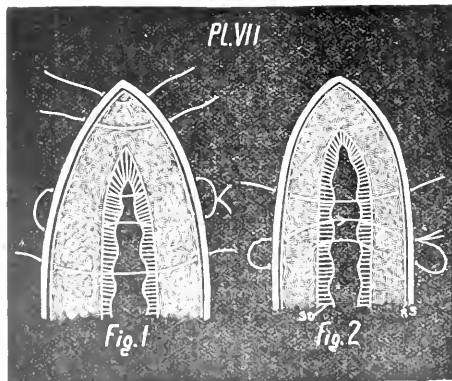


Plate VIII.—Fig. 1, a vertical mattress suture; the deep seizes the whole uterine wall, excepting the decidua; the superficial is intended only for the peritoneal coat. Fig. 2, a suture analogous to Czerny (Plate I, Fig. 3), and the story suture (Engelmann) of Schröder; the deep unites the muscularis, the superficial the peritoneum. S, peritoneum; M, parenchyma; D, decidua.

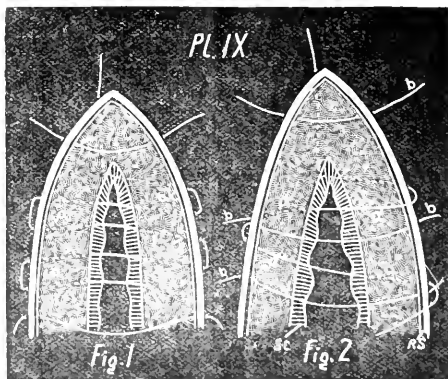


Plate IX.—Fig. 1, a continued horizontal mattress suture with superficial sero-serous suture. The peritoneum may be entirely avoided, as shown by the dotted lines, a a a (Fig. 1, Plate X), the same when closed. Fig. 2, a further suture, which seizes the peritoneal edges alternately, in connection with sero-serous button-suture, to unite the peritoneum. Fig. 2, Plate X, the same when closed. a a a the deep, b b b the superficial, sutures.

True, there are authenticated cases on record in which the classical Cæsaean section has proved successful, under unskilled and even unscientific

management. But leaving out his own two cases of recovery, justly credited with having used the sero-serous suture.

ery (the particulars of the other successful case are unknown to me), the favorable termination of nearly all of these cannot be explained upon any scientific basis, and must be placed in the category of accidents, and therefore cannot be compared with the

classical Cesarean Section, and that both skill and experience are essential to its successful execution. Abuse will follow; but that is not the fault of the "New Operation."

In the face of the facts, arguments, and statistics presented, and in consideration of the great im-

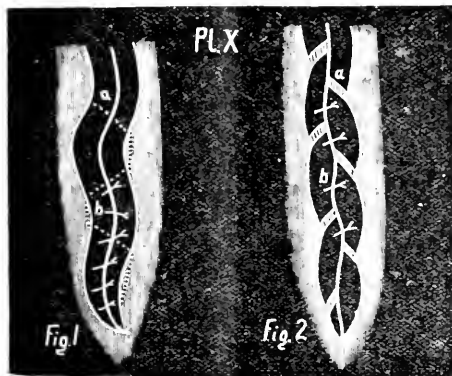


Plate X.—a, the deep, b, the superficial, sutures. See Plate IX, Fig. 1. See Plate IX, Fig. 2.

results following an operative technique suggested by experience, experimental research, scientific and logical reasoning.

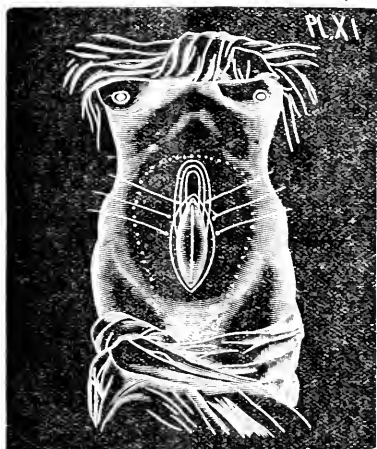


Plate XI.—Represents the abdominal incision, sutures introduced and drawn out of the cut in loops. The line in the centre indicates the line of incision in the uterus. The dotted line marks the outline of the womb.

The marvelous success of Leopold proves beyond all doubt that Säger's "New Operation" is correct in principle and perfect in detail; that it is destined to hold its place in obstetric operations; that its sphere of usefulness will be larger than that of the

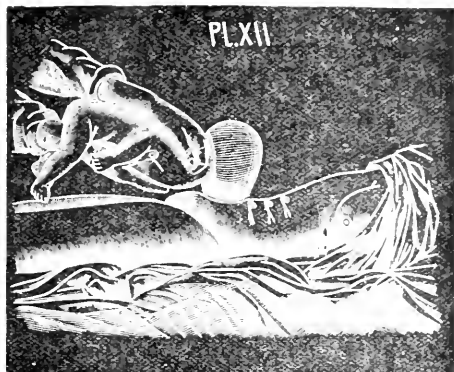


Plate XII.—Shows the stage of the operation, as the fetus is drawn from the abdominal cavity during the delivery of the child. The fetus and the sutures. Plate XI, as described.

portance the subject bears to the lying-in women, and the profession at large. I take the liberty, Mr. President, of urging the members of this academy, and, to whoever may chance to read this dissertation hereafter, that they give the "Säger-method" of

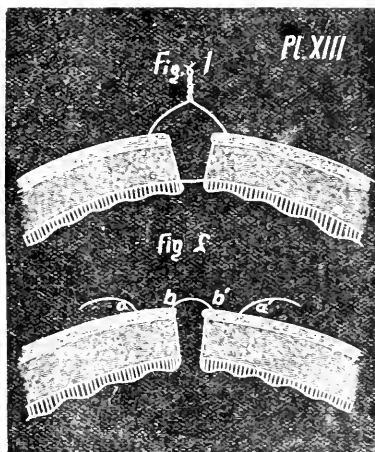


Plate XIII.—Shows the latest method of holding the uterus in place, by the use of the deep sutures, and the use of the silk, as in Fig. 2, to support the uterus after the delivery of the child. The force of the sutures is shown by the arrows.

performing hysterotomy, at once that careful attention necessary for a perfect understanding and

thorough familiarity requisite for its successful performance. No one knows how soon he may be called upon to perform it. Let us think with horror of the statistics of our own State: seventy-three cases with the saving of but nine women, and only

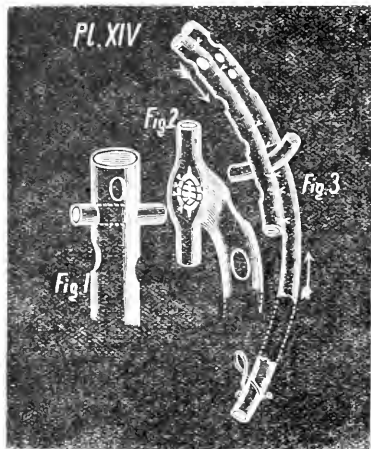


Plate XIV—Fig. 1, drawing of the gesture of Thiede. Figs. 2 and 3, drawings of the side of the uterus.

eight children. This alone should be an impetus to every one to bestir himself, and study this vital question.

I have so far omitted speaking of the *Porro* operation, and now make mention of it only to quote the indications for its employment, as given by Sanger.

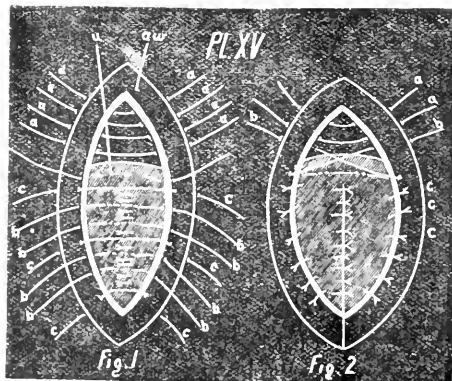


Plate XV—Fig. 1, drawing of the uterus after a Porro operation; Fig. 2, drawing of the uterus after a classical section. The peritoneal parietal suture may be taken out and peritoneal cavity drained. The uterus is sutured to the abdominal parietal suture over the abdominal parietal suture. The abdominal parietal suture is sutured over the abdominal parietal suture. The abdominal parietal suture is sutured over the abdominal parietal suture. The abdominal parietal suture is sutured over the abdominal parietal suture.

Indications for the Porro-operation:

"1. When the discharge of lochial secretions is rendered difficult or impossible *per vias naturales* i.e., by stenoses and atresia of the cervix and vagina, or by tortuosity and compression of the soft obstetric channel, due to a tumor not belonging to the uterus."

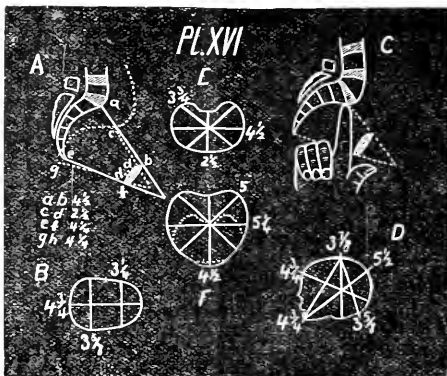
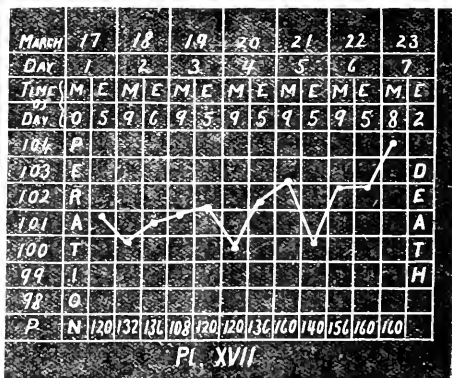


Plate XVI—A, dotted line indicates deformity in case operated upon. B and D, diameters of the child's head. E, pelvic inlet of case reported. F, dotted line the same with natural sized pelvis. C, manner in which the conjugate was obtained.

"2. By pregnancy in the closed up half of a *uterus bicornis*, in which delivery is preferably effected by establishing an artificial opening towards the open half. (Strictly speaking, this is not a true Porro-operation, since the remaining half of the uterus may be again impregnated.)"



Temperature chart of case reported."

"3. When infection of the *corpus uteri* is evident."

"4. After repeated classical *sectio-Cæsaria*."

"5. By serious general osteo-malacia (?)."

Thus, from what we have learned by a careful study of the "Improved Cæsarean Section," it can-

not be denied that the Porro-operation has been severely, yet properly restricted, and will be reported to only in very rare instances.

In conclusion, it may be proper to state, that no one regrets more fully than I do, that the case here reported was not a Sanger operation, *per se*.

My principal reason for not following Sanger was, that up to the time of the operation, indeed up to my correspondence with Dr. Sanger, I had failed to fully comprehend his method. I have given you a faithful description of the new operation and have attempted to explain the same by the subjoined drawings.¹

THE SWEDISH MOVEMENT AND MASSAGE TREATMENT.

Abstract of a paper read before the Clinical Society of Maryland, February 17, 1888.

BY HARTWIG NISSEN.

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I am here to-night to tell you a little of what I know about "The Swedish Movement and Massage Treatment," and if some things should seem strange, or you should think that I have claimed rather much for it, I beg you to remember that *all* that I have to say is based upon *facts*, and that I am here not as a special agent for myself, but as one who wants to lay before you a clear and true representation of what has been done.

As Herodotus observed the curative effects of gymnastics on his own delicate health and thereby was brought to use movements in therapy, so did the Swede, *Pehr Henrik Ling*, in the beginning of this century, study the movement treatment, because he had cured himself of rheumatism in the arm by gentle percussions. Ling had been a fencing master and instructor of gymnastics, but now he studied anatomy and physiology, and the influence of the different movements and manipulations in different chronic diseases. He brought gymnastics into a system corresponding with the knowledge of physiology, and this is the reason why it is called "the Ling System," or the "Swedish Movement Treatment." By ardent study and labor, Ling succeeded at last in making his new ideas recognized, and in 1813 the first "College for Pedagogical, Military and Medical Gymnastics," called the "Kongl. Gymnastiska Central Institutet," was established in Stockholm at the expense of the Swedish Government. The principal studies for graduation are anatomy, physiology, pathology, hygiene, diagnosis, principles of the movement treatment, and the use of exercises for general and local development. Ling died in 1839. His pupils, Brandting, Georgii, Liedbäck and G. Indebetton, published Ling's theories. Hereby, and on account of the many foreigners who studied at the Central Institute of Stockholm, Ling's art soon became known in a great part of the world.

Mr. Joseph Schreiber, of Vienna, in his "Manual

of Massage and Muscle Exercise," p. 21, says: "The most powerful impetus, however, given to the revival of mechano-therapy, originated with a Swede, the originator of the modern "movement cure," whose doctrines, spreading to England and to Germany, have after many decades, and in spite of being marked by some extravagancies, gained universal recognition."

Endowed with depth of thought as well as creative genius, fortified by scientific information, and sustained by an untiring devotion to his task, Ling was early led from result to result by a careful classification of movements, and by a scientific examination of their different results. Ling distinguished in the first instance between *Active* and *Passive* movements; *Active Movements* being such as the subject performs entirely by voluntary muscular contractions, and *Passive Movements* such as the subject takes no part in, beyond allowing the operator to *move* the whole or any portion of his body—as *flexion, extension and rotation*—and to *manipulate* it, as in *stroking, kneading, pressing, percussion, etc.* These simple movements Ling combines into *Resistive, or Duplex Movements*, viz.: *Active passive*, or "*concentric duplex*" movements, such as the operator resists, and *Passive active*, or "*excentric duplex*" movements, such as the operator overcomes when the patient resists. Duplex, because two individuals engage in it; concentric, because the patient's muscles have to overcome a resistance which prevents flexion—a movement toward the trunk; excentric, because the force acts in a direction away from the body.

These movements cause an increased flow of blood to the muscles and soft parts, increasing thereby the circulation and removing accumulation of tissue waste. They cause resorption of exudations, transudations and infiltrations, and a separation of adhesions in tendon sheaths and in joints. They increase the oxidizing powers of the blood. They relieve the congestion of the brain, lungs, intestines, uterus, liver and kidneys by increasing the flow of blood to the muscles. They stimulate directly the sympathetic nervous system, thus increasing secretion, and reflexly the activity of unstriated muscle fibre, and so relieve various functional derangements. And they educate morbidly affected muscles, to convert abnormal into normal actions, and to suppress useless movements.

Dr. J. Schreiber, in his book (page 67), says: "We understand by passive movements all movements performed by the physician upon the patient, the latter remaining passive. The following results are obtained:

"1. Extravasations occurring about dislocated joints are, by pressing and rubbing the tendons and ligaments in which they are embedded, finally liquefied, and thus more quickly absorbed.

"2. In stiffness of joints the contracted muscles and tendons are forcibly but gradually elongated, and any existing exudations or vegetations within the joints are disintegrated and absorbed.

"3. By the forcible stretching of the muscles their nerves are likewise stretched; molecular changes being thus set up in both.

¹ Plates XI, XII, XVI and XVII, my own; the rest taken from Sanger's book, "Der Kaiserschnitt," etc., 1122.

"4. Forced extension of the muscles causes pressure on their blood- and lymphatic vessels, thus accelerating the circulation.

"5. Finally, such muscles as have by rheumatic or neuralgic pains been kept in a state of inactivity, have some of their much-needed exercise restored to them. Passive movements thus form in certain diseases, as in neuralgia and rheumatism, the introduction, as it were, for the more painful active motions which have to follow."

Dr. J. Graham, "Treatise on Massage," page 23, says: In 1844 the Supreme Medical Board of Russia appointed two members of the Medical Council to inquire into the merits of movement and manipulation treatment as practiced by M. de Ron, one of Ling's disciples at St. Petersburg, who had been using it then for a period of twelve years. From the highly commendatory report of the councillors we quote the following: "All passive movements, or those which are executed by an external agent upon the patient, as well as active ones produced by the effort of the voluntary muscles, and the different positions with the aid of the apparatus or without it, are practiced according to a strictly defined method, and conducted rationally, since they are based upon mechanical as well as anatomical principles. *Experience teaches us the usefulness of the institution, as many patients thus treated have recovered their health after having suffered from disease which could not be cured by other remedies.*"

Before speaking about more details of this system, I must say a few words about what is meant by the word "massage." Dr. J. Graham says: "Massage—to knead or handle—is a term now generally accepted by European and American physicians to signify a group of procedures which are usually done with the hand, such as handling, manipulating, rolling, and percussion of the external tissues of the body in a variety of ways, either with a curative, palliative, or hygienic object in view. Its application should in many instances be combined with passive, resistive or assistive movements, and these are often spoken of as the Swedish movement cure. There is, however, an increasing tendency on the part of scientific men to have the word massage embrace all these varied forms of manual therapeutics, for the reason that the word 'cure,' attached to any form of treatment whatsoever, cannot always be applicable, inasmuch as there are many maladies that preclude the possibility of recovery and yet admit of amelioration."

In this I cannot fully agree with the author. Massage means *kneading*, and when we go so far as to say that massage means the handling and manipulation of the flesh as in kneading, pressing, stroking, tapping, etc., I think we have embraced all that can come in under this term. To say that a passive movement, such as flexion and extension, or even a duplex movement, is massage or *kneading*, is too much to say, and has been a source of great harm both to patients and to the original Swedish system, as I shall have occasion to show later on.

"Scientific men will use the word *massage* to avoid the word *cure*." If these men had read little about Ling's system they would not have found the word

cure, as Ling called it "Sjukgymnastik," that is "gymnastics for invalids," or better, "the treatment of diseases by movements," which also embraces the different manipulations now grouped under the term massage. Rosshack (Lehrbuch der physikalischen Heilmethoden, Berlin, 1882) calls it "Gymnastics and Massage." Schreiber's term is, "Mechano-Therapy." Rothstein, Neumann, Eulenberg and others call it "The Swedish Health gymnastics," but very few take to the term "massage" to mean both manipulations and active and passive movements. It is true that we frequently see "movement cure" on circulars and in some books, but the term is used purely on account of lack of knowledge and part on account of fraud. I should think that the most correct and all embracing term would be "*Swedish Movement and Massage Treatment*."

Massage embraces the processes of kneading, pressing, stroking, rubbing, tapping, hacking, and percussion when applied to the muscles in question for the propulsion of blood, lymph, and exudations from the periphery toward the centre.

In Europe this is used, combined with movements, in local troubles, such as: Neuralgia, muscular rheumatism, sprains, stiffness of joints and tendons, cerebral congestion, chronic dyspepsia and constipation, chorea, writer's cramp, etc. Dr. Weir Mitchell, of Philadelphia, in his "Treatment of Nervous Diseases by Rest," has applied massage, as he says in his "Fat and Blood," page 71, "to deprive rest of its evils." This massage consists of gentle but firm rolling, kneading, friction, etc., of the skin and muscles of the whole body in order to bring about a free circulation of the blood and thereby improve or maintain the nutrition of the muscles. No doubt this way of using massage in nervous diseases is of very great value, but all over the United States we find men and women pretending to give "massage" in the broadest sense of the term as used by Dr. Graham. These professionals claim to have received their training from Dr. Mitchell.

According to Dr. Graham's book, page 34, "Dr. Mitchell states over his own signature, that he does not teach massage." But suppose we admit that some of them have learned from Mitchell's masseurs, still, what do they know? How is it possible that a man who has been taught to use his hands only in a certain way for a special malady can know how to use them, and how and when to apply proper movements in all the different diseases which are treated by "Swedish movements and massage?"

Much experience and hard study is required in order, understandingly, to give a full treatment. The different manipulations may be for some persons easy enough to learn, but the active and passive movements so indispensable for the cure of certain forms of disease, require and exact knowledge of anatomy and physiology for their proper application and performance.

I will now in a few words describe the mode of treatment which Ling systematized. Ling distinguished between five different fundamental positions, viz.: *standing, sitting, kneeling, lying and hanging*; these he subdivided into a number of starting posi-

tions with the arms, legs, trunk and head, which combined in various ways make nearly 12,000 positions in which the different movements may be either taken or given. And so the number of movements may be said to be endless to suit each particular ailment.

The movements may be spoken of as: *Strengthening* movements, such as flexion, extension, torsion, etc.; *Stimulating* movements as percussion, vibration, etc.; *Quieting* movements, as rotation, friction, etc.; *Derivative* movements of the extremities; *Purgative* movements, as kneading, pressing and active movements on the bowels. Some movements have a special effect on the *respiration*, others on the *circulation*, etc.

To illustrate how these movements are applied in different cases let us take, for instance, a patient suffering from *anæmia*. If he is well enough to sit up, we will give him:

1. "Chest lifting," a respiratory movement; the chest is expanded, the inspiration becomes deeper and is followed by a stronger expiration. Thus a greater amount of oxygen is taken in and waste matter given off. This must stimulate the functions of the organs and thus accelerate the process of renewal and an exchange of material in all parts of the body.

2. "Foot rotation," to equalize the circulation by increasing the flow of blood to the feet.

3. "Stomach vibration," which has a direct effect on the stomach and will improve the appetite and the digestion.

4. "Forward arm rotation," a respiratory movement, which has a similar effect on the first one.

5. "Trunk rotation," which brings the muscles of the waist and bowels into play and acts on the circulation, especial in the portal system.

6. "Knee flexion and extension" with resistance. This has a strengthening effect on the flexors and extensors of the leg and promotes the circulation.

7. "Bowel friction," to promote operations of the bowels.

8. "Back percussion," which stimulates the nerve centres.

These movements can of course be applied to the patient in different positions according to his strength, and when the patient improves other and more vigorous movements are used. In a case of *constipation* a prescription of movements like the following would be most effective:

1. "Leg flexion and extension," an active movement under pressure on the sacral region and bowels. This movement brings into play the flexors and extensors of the legs and has a purgative effect on the bowels.

2. "Backward leg traction," a duplex movement, alternately from a standing position the patient resisting forwards. Here the muscles of the bowels, the flexors of the thigh and extensors of the calf are in action. Therefore this movement has a purgative as well as a derivative effect on the organs of the pelvis.

3. "Forward trunk flexion," pressure being exerted on the sacral region and the bowels from a lying position—active movement.

4. "Trunk torsion," from a kneeling position—duplex movement.

5. "Trunk rotation," from astride, sitting position—passive movement.

The third, fourth and fifth movements bring into play all the muscles of the bowels, increasing the circulation of blood in the portal system; they have a good effect on the digestive organs and act purgatively in a measure.

6. "Breech percussion, deep," standing position—passive movement. This acts on the sacral nerves, and has a stimulating effect.

7. "Bowel kneading and friction," reclined position, with the muscles of the bowels perfectly relaxed—passive. This acts directly on the intestines and promotes the operation of the bowels.

8. "Vertical arm flexion and extension," sitting position—duplex movement. This has a strengthening effect on the muscles of the arms, chest and back, and tends to equalize the circulation of the blood.

In cases of *heart disease* movements must be given, which shall diminish the pressure of the blood, and decrease the activity of the heart. Inspiration acts as a pump on the circulation towards the heart. Muscle contractions produce a pressure on the walls of the blood-vessels, whereby the blood is forced towards the heart; hence, respiratory and circulatory movements are here of great value.

Dr. Gustaf Zander, of the Mechanico-Therapeutic Institute in Stockholm, says: "In heart disease, movement treatment is an uninterrupted necessity, at least during the winter. It is a pity for any such patient, who has the opportunity not to use this treatment. It is astonishing what excellent effects, regular, gentle, but many-sided muscular exercises, have on diseases of the heart. Some of these when not too far gone, can be entirely cured, others can be stopped from further development, and all can be relieved."

In *scoliosis*, in which the muscles on the convex side are weakened and pathologically charged, and the muscles on the concave side normal; it is clear that the weakened muscles on the convex side must be strengthened and developed. According to Dr. T. J. Hartelius, the principal of the Central Gymnastik Institute in Stockholm, "The restoration of a pathologically changed muscle cannot be produced by mechanical extensions, but only by muscular exercise and electricity." "But," he says, "for the restoration of a curved spine extension is necessary. The question is, therefore, whether this can be effected by the organisms own remedies? This is easy enough to prove. In mild cases of lateral curvature, where there is not yet any deformity in the vertebrae, the spine is straightened at each extension of the back. By flexion on the convex side, the spine is not only straightened, but it can be bent so far as to display a curve to the other side. In cases where the deformity of the vertebrae makes a full extension of the spine impossible, it is still possible by its own strength to produce an extension in its highest degree. For instance, in a "Forward trunk flexion and extension" the patient stands sup-

ported on the thighs and bends forward; when he raises himself up the operator resists him on the neck. Or, in "Backward trunk flexion" the patient is lying on the front of his legs, and raises the back up backward.

These, and a few other active movements, can better than any other mechanical remedy, straighten out the curved parts. In a one-sided scoliosis, for instance, with the convexity to the left, "lateral trunk flexion to the left" may be given. The operator puts his hand on the highest point of the curve, and resists the patient when he bends down. This can be performed either with the patient sitting, standing, or lying on his right side. Several other movements are also given, with the view and intention of strengthening the muscles on the convex side, and straightening out the spine, and should be used according to the strength of the patient, and the particular shape of the deformity.

Dr. Schreiber (page 86) says: "The treatment of scoliosis by the Ling system, which has scored some of its greatest successes in this very department, requires, however, quite a special study, and can hardly be carried out without both apparatus and trained assistants." Dr. M. Eulenbergh in "Die Schwedische Heilgymnastik, Berlin, 1853," says: "Ling's method is the only truly rational therapeutic means for the cure of chronic disturbances of motivity, such as result from spinal curvature, and for pseudo-anchylosis, the phthisical-tendency, pigeon-breast, peripheral paralysis, etc.

Even in cases of paralysis from lesions of the cord, it may still effect a cure, where all other measures, undertaken after the original disease has run its course, will be found useless. Ling's gymnastics have an even greater and more certain effect upon innervation and nutrition, than the common form of gymnastic exercises. Spinal (lateral) curvatures, resulting from faulty carriage (in consequence of a preponderance of muscular force on one side of the body), are nowadays never treated by any good orthopædist by any other means than the "Swedish system."

In various *joint* affections this treatment has been used with great success. It may be used to increase the circulation in and around a joint, or to promote absorption and to squeeze exudations out of the joint.

In treating a *sprain* of the ankle we begin with gentle centripetal frictions, commencing at the toes and gradually proceeding upwards as far as the painful spasm reaches, using the finger tips, then the whole surface of both hands. As the pain diminishes more and more force may be employed, and when the contraction has so far relaxed as to leave the joint movable, gentle passive flexion and extension, and rotation of the foot should be performed. After the second or third sitting the movement of the ankle-joint will generally be quite free and almost painless; then more force may be applied and active and duplex movements used. Usually the treatment is repeated three times daily. Provided there is no fracture, four to ten days is enough to cure the patient, and the sooner treatment is begun the quicker will be the cure. Other

joints are treated on the same plan. But the hip and shoulder joints are more difficult to treat, and require a much longer time in order to produce a cure. And so on, each different disease has its own peculiar treatment.

It may be stated as a fact, that not only in the Central Institute in Stockholm, but in a number of Swedish movement institutions in many parts of Europe, that the following diseases have been treated successfully according to this method: Chlorosis, anæmia, scrofulosis, scorbutus, different neuralgias, rheumatism, gout, different venous congestions, adhesions of the pleura, emphysema, hysteria, hypochondria, general nervousness, insomnia, epilepsy, paralysis, chorea, writer's cramp, bronchial catarrh, heart diseases, dyspepsia, constipation, hyperæmia of the liver, paralysis of the bladder, disordered menses, prolapsus and adhesions of the uterus, round shoulders, chicken-breast, scoliosis chronic joint diseases, stiff and sprained joints and tendons, hydrarthrus, muscular atrophy, and a few others.

After what has been said, it may be easily understood that it is absolutely necessary that the operator should not only be fully acquainted with the movements and their uses in different cases, but should also have a full knowledge of anatomy and physiology, and of the exact character of the disease which he is to treat. Still it has happened several times that I have been called in by physicians to treat some of their patients, and when I have asked what the trouble was, I have been told that it was not my business to know.

It is coöperation between the medical profession and the gymnastics, which is desirable and necessary in order to produce the best results.

[The author then gave a number of cases, illustrating the beneficial effects of massage and movements.]

The following are a few extracts from reports of the Swedish Movement Institution in Bremen:

"Of ten digestive disorders, constipation, cardiacalgia, flatulency, dyspepsia: six were cured, three greatly improved and one improved.

"Of fifty-nine spinal deformities: twenty-three were cured, seventeen greatly improved, fourteen improved and five still under treatment.

"Of six cases of muscular weakness: five were cured and one greatly improved.

"Of eight rheumatic disorders: seven were cured and one greatly improved.

"Of thirteen sprains, wrist, finger, knee and ankle being involved all were cured in from four to twelve sittings."

The Swedish movement and massage treatment is well worthy of adoption by the medical profession in the United States.

WEICHARDT (*Präger medicinische Wochenschrift*) has employed an ice-bag wrapped in flannel, laid over the spleen in typhoid fever, and thinks that a reduction of temperature and a hindrance in the development of bacilli resulted.

ON THE IMPORTANCE OF PRIMARY SUTURE OF DIVIDED NERVES, WITH AN ILLUSTRATIVE CASE OF SUCCESSFUL SUTURE OF THE MEDIAN AND ULNAR NERVES.

Read before the Philadelphia County Medical Society, March 11, 1888.

BY CHARLES B. NANCREDÉ, M.D.,

OF PHILADELPHIA.

Although I have a most profound faith in the *vis medicatrix nature*, I still think that Dame Nature should always have fair play in her battle with injury or disease, and this she certainly fails to receive at the hands of too many practitioners.

In a paper published some fifteen years ago I contended that if, with such vascular structures as those of the face, which certainly would unite sooner or later in some sort of fashion, we habitually resorted to suture, merely for cosmetic effects, we were all the more bound to do so for such avascular structures as tendons, which, if they failed to heal well, much more if no union was secured, must entail disability or total uselessness of a member. Now-a-days a surgeon who should fail to suture a divided tendon would be considered derelict in his duties. In like manner, I trust that in the near future the general practitioner will be so impressed with its importance that he will consider that his duty is unfulfilled until he, or some surgeon summoned by him, has sutured any divided nerve.

It is needless for me to dilate upon the evils consequent upon the abolition of function of an important nerve, but I would recall to your minds cases which must have occurred in the practice of most of those present, where divisions of even such small trunks as digital nerves have resulted in troublesome ulcerations, causalgias, etc.

Doubtless the indifference of practitioners to wounds of nerves; or, more strictly speaking, their inclination to "leave them to Nature," has arisen from two causes, viz.: 1, the fear that suturing might in some way determine tetanus; and 2, the well known fact that nerves divided or even excised with the avowed intention of abrogating their function, too commonly reunite.

The first cause should not deter us, as we now know that a suture, *per se*, can never originate tetanus; while as to the second objection, certain facts which I shall submit for your consideration warrant the conclusion that traumatic divisions of nerves, unless effected by a clean cut—or perhaps ball wounds—involving solely the nerve and little, if any, of the contiguous structures, differ so materially from those purposely effected by the surgeon's knife, that conclusions derived from the result of neurectomies cannot safely be applied to accidental divisions of nerves.

Besides, granting that reunion will occur without suturing, as a stitch can do no harm, why not use one, since it will at least conduce to a more rapid resumption of function? While primary union of nerves with immediate resumption of function—*i. e.*, in a week or ten days, is a surgical rarity, yet it does

at times occur, and would doubtless be of more frequent occurrence, if sutures were the rule and not the exception.

My aim in this brief note is merely to call your attention, as general practitioners in whose hands many of these cases will fall, to the duty of suturing divided nerves as a routine practice, just as you would tie arteries, and to describe a simple, effective method of carrying out the indication.

A critical examination of the histories of nearly all excisions of nerves where reproduction has occurred, will show that they were removed either from a bony canal or from an intermuscular space in which they normally laid, with the minimum of injury to the surrounding tissues. Moreover, even when their ends have been turned back and sutured in position or even buried in the surrounding tissues, they have been so secured in the same intermuscular space which the nerve normally traverses. In other words, the bony canals and the intermuscular spaces likewise act as moulds which direct the course of the reparative material from the proximal to the distal end of the severed nerve.

In extensive wounds, however, this condition does not obtain. Intermuscular spaces are dislocated, large masses of scar tissue are formed, so that, instead of the new nerve-tissue being compelled to grow in only one, and that the right direction, it has too often an inseparable barrier interposed, and union fails.

In the case which I now show you, the proximal ends of the ulnar and median nerves were directed at right angles to their intermuscular space, and would have been infallibly fixed between the ends of the torn muscles in a dense mass of scar tissues, resulting in permanent loss of power of the member. In the seventh month after suture—*i. e.*, the usual period required for the degeneration and regeneration of a nerve, first sensation and then motion returned, until now, although the functions of the member are not perfect, the boy can earn his living, and do nearly all that can be effected by a normal hand and forearm.

Further quotation of my own cases or those of other surgeons seems hardly necessary, and such good results as I here show you have been frequently reported.

Finally, how should the sutures be passed and what should their material be?

Fine aseptic catgut passed by means of an ordinary sewing-needle is to be preferred, but fine aseptic silk can be used, and I myself have resorted to this in an emergency. Should the nerve be very much lacerated and frayed out it may, perhaps, be sometimes proper to cut off a portion to gain a clean surface, but this is rarely desirable. The needle should be passed from below upward through the proximal end of the nerve at one border, across, and then passed from above downward near the opposite

¹ In this patient the brachial artery was also torn and leaving only a ridge of muscle and vein through which no arterial current could be carried on. The deficient blood supply possibly explains the failure of the recovery of power in the interosseal muscles, although some of the intrinsic muscles of the hand which are supplied by the ulnar nerve contract well.

border, entering the needle from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch from the cut end, according to the size of the nerve. The needle must now be passed from below upward through the distal portion of the nerve at the border corresponding to the last passage of the needle through the proximal end across, and made to pierce the nerve from above downward, when the suture will be found to correspond to the free end of the thread in the proximal piece of nerve.

Gentle traction with an appropriate position of the member will, by the tying of one knot, accurately approximate the nerve ends; in a word, by this simple method all the advantages of the two separate sutures commonly recommended are obtained with a far greater degree of security. I need not say that the strictest asepsis should be secured, which is easy enough provided the wounded part, the surgeon's hands and his instruments be strictly cleansed, and the wound be freely irrigated with the bichloride and tartaric acid solution. If the surgeon gets an uncontaminated wound, it is his own fault if he has suppuration, and even with the ordinary run of accidental wounds, if he will thoroughly scrub his hands with a nail brush and hot water, and likewise so treat the parts surrounding the wound, pour boiling water over his instruments, without any further antiseptics, in most cases healing without suppuration can be secured, while the omission of these details will mar results with gallons of mercuric solution flowing over the wound.

MEDICAL PROGRESS.

SUBCUTANEOUS SEPARATION OF TRACHEA FROM LARYNX.—At the *Versammlung Deutscher Naturforscher und Aerzte* last September, NOLL, of Hanau, reported the case of a workman who received a severe blow on the front part of the neck from a piece of machinery. The skin was not wounded, and only a little blood was coughed up. The neck was soon very much swollen, and attacks of suffocation soon came on. On making a tracheotomy Noll found that the trachea was separated from the larynx, and very much retracted, and that the cricoid and thyroid cartilages were fractured. The trachea was drawn up and sutured to the larynx, and a cannula was placed in the passages. Later it could not be removed because it was held in by a cicatricial contraction. The usual methods of dilatation failed, and a laryngo-fissure was made, in which a Dupuis's cannula was worn for nine months. The trachea and larynx are now grown together. The patient is in good condition, but his voice is hoarser than before.—*Deutsche med. Wochenschrift*, No. 52, 1887.

PERSONAL HEALTH-RULES IN TIME OF CHOLERA.—**SANITÄTSRATH DR. PAUL SACHSE**, of Berlin, acting on what he believes to be a well-grounded supposition that cholera is due to the cholera bacillus, has made out a list of personal health-rules to be freely distributed in time of cholera, so that "every one can carry a copy in his coat-pocket, and hang one

on his mirror, or on the wall like a calendar." The rules that he advises are as follows:

Cholera is caused by infection with the microscopic organism called the comma-bacillus, on account of its peculiar form in cholera. These get into the human intestine, increase rapidly under favorable circumstances, and cause the peculiar symptoms of cholera. This begins always with an apparently harmless diarrhoea, which continues for several hours before the disease breaks out with force, and becomes dangerous to life.

The possibility of infecting one's self in time of cholera with that bacillus is increased a thousand fold by assemblies and intercommunication of people. The outbreak of the disease is favorably influenced by everything that causes any stomach or intestinal affection.

Since we have no absolutely certain means of controlling the disease after it has broken out, we should especially beware of becoming infected, and should take all precautions to kill or at least render as harmless as possible the cholera germ before it gets into our bodies, and by a regular mode of living and prudent deportment avoid anything that can disorder the digestive apparatus.

Since the cholera germ gets into the stomach through the mouth, and from the stomach into the intestines, we should take care:

1. To take only cooked food and drink. This is the most important rule. Even the washing, rinsing, and bathing water should be free from germs, and the water from the wells should never be used, but only that from the city pipes.
2. To keep the body clean, and especially the hands, by frequent washing, especially before meals, and this should be done with disinfecting solutions, such as a 5 per cent. solution of carbolic acid (or a $\frac{1}{2}$ per cent. solution of sublimate), and of this in time of cholera at least a quart should be used for washing the hands.
3. To live judiciously and carefully in time of cholera, and
 - a) Not run away!
 - b) Not to harbor people from cholera places.
 - c) Not to visit a house in which there is cholera.
 - d) Still less eat or drink anything in such a house.
 - e) Especially, to take nothing, food, linen, laundry, playthings, or anything else, from house in which there is cholera.
 - f) To avoid in every way anything that may disturb digestion; therefore:
 - Avoid taking cold, and sudden cooling off after being heated.
 - Do not sit up late at night with friends (drinking cold beer, for example).
 - Do not wear clothing that is very thin, and do not take off underclothing suddenly.
- On no account bathe in running water. Water courses often bear the germs of cholera.
- Avoid collections of people, fairs, festivals, etc. of every kind.
4. All kinds of food are to be avoided that may cause catarrh of the stomach and intestines; so also, over-eating and over-drinking are to be avoided.

Every one should take the greatest precaution with regard to what comes into the house.

What may one eat and drink? What is forbidden? What allowed?

FORBIDDEN!!	ALLOWED.
Unboiled water!	Boiled water, with cognac, arrac, or red wine.
Raw milk and raw cream, and sour milk and whipped cream!	Good soda or seltzer water, and natural mineral waters.
Butter and buttermilk!	Red wine.
Freshly baked bread!	Good lager beer.
All cold soups.	Coffee, tea, and cocoa.
Raw meat.	Baked bread must be heated for at least $\frac{1}{2}$ hour in the house before it is used!
Cold, cut meat that has stood for a long time.	All hot well-cooked soups.
Salads of every kind.	All hot (boiled, stewed, roast) meats.
Mayonnaise and crèmes.	All cooked vegetables (potatoes, rice, macaroni, asparagus, green peas, cauliflower, etc.)
Raw fruit and unfermented fruit-juices.	Freshly cooked, warm compotes.
Cheese.	Eggs, and food made of eggs.
Cookies.	Puddings.
Ice.	

GOOD DAILY DIET.

Morning. 1st. Breakfast: Coffee, tea or cocoa (with or without well-boiled milk) eggs, bread (that has been well heated and dried in an oven or stove for $\frac{1}{2}$ hour [in other words, bread that has been cooked a second time]) *without* butter.

2d. Breakfast: Bouillon with egg, bread as above, warm meat, wine.

Noon meal: Hot soup, boiled or stewed meat, roast meat, vegetables, fresh cooked compote, red wine or good beer.

Tea: Coffee or tea.

Supper: Tea, or soup made from the meat left over from the noon meal, with the morning's bread, or warm meat. Wine or beer as above.

5. Every irregularity of the body should be most strictly guarded against in time of cholera. Apparently slight diarrhoea should not be neglected, but a physician should be consulted immediately.

Sachse suggests that in case of threatened invasion of cholera these rules should be printed in the newspapers, journals, etc., in addition to being printed on slips for public distribution. [The more important parts of these rules should be printed in bold black-faced type. The large foreign element in America would render it necessary that these rules be printed in other languages than English. For the German, the rules may be copied *verbatim* from the original].—*Deutsche medicinische Wochenschrift*, December 22, 1887.

CHOLECYSTOTOMY WITH RECOVERY.—On February 14, M. Polaillon reported to the Academy of Medicine of Paris a case of cholecystotomy by M. TERRILLON, that was followed by recovery.

The patient was a woman, æt 24, who had had no previous liver trouble, until she noticed a tumor in the right side. On examination M. Terrillon made out a tumor, below the border of the ribs, that ex-

tended to below the umbilicus. The skin was normal, the umbilical cicatrix regular, and there was no enlarged subcutaneous veins. Palpation showed the tumor to be as large as the head of a fetus, tense, elongated vertically, smooth, and very movable transversely. It did not appear to follow the respiratory movements. Its extent was easily made out by percussion. Its dullness was coextensive with that of the liver. In other respects abdominal percussion was normal. There was no icterus, no pain, and no serious inconvenience of any kind. There was some dyspepsia and emaciation. The urine was normal. It was evident that the tumor was connected with or adherent to the liver. No exploratory puncture was made, but Terrillon determined to make an exploratory laparotomy.

Operation on November 23, 1886. A median vertical incision was made, about 4 cm. long, and afterwards enlarged to 8 cm. When the abdomen was opened the lower border of the liver was easily recognized, since it was lower than normal. At the level of the lower border, and attached to the inferior face, was an elongated tumor, which descended very low, had bluish walls, was very fluctuant, and of a cystic appearance. The finger introduced into the wound showed that the tumor was a distended gall-bladder. Puncture with a capillary trocar gave issue to a liquid as clear as water, but a little thicker, and the last drops of which were of a milky whiteness. It was then found that in the gall-bladder was a gall-stone as large as a cherry. The bladder was now drawn partly out of the abdominal wound, and then opened. Its walls were very vascular. Hemorrhage was guarded against by forceps, and the cavity was explored.

The first calculus found was easily extracted, though it was adherent to the bladder by a thin filament. The finger carried into the bladder then found, at the far side, the summit of the cavity, a second calculus imbedded in the mucous membrane. It was so deeply imbedded that, at the distance it was from the opening, it was impossible to detach it.

The bladder was then drawn further out, so as to lessen the depth of the cavity, when the stone was removed in fragments by means of forceps.

Having resected a portion of the base of the bladder, the operator sutured it to the abdominal wall, making a large biliary fistula in which two large drains were placed, and a dressing then applied.

In about a month the fistula was so far closed as to admit only a very small filiform bougie. Bile flowed abundantly from this orifice, generally between 9 P.M. and 2 A.M.—about four hours after the last meal. Two cauterizations with the thermocautery caused the fistula to close completely, two months after the operation. Meanwhile the patient had gained flesh, and was completely cured.

In commenting upon the case M. Polaillon says that, generally, the most favorable incision for cholecystotomy is one following the external border of the rectus muscle. But in order to have more room one must sometimes add to this a more or less transverse incision a little below the border of the

costal cartilages. M. Terrillon's incision, however, was for an exploratory laparotomy.

Opening of the gall-bladder may give rise to hemorrhage, which must be controlled by hæmostatic forceps, or to extravasation of bile, which must be prevented at all hazards by drawing the bladder out and protecting the peritoneum by aseptic sponges. Suture of the abdominal wall completes the operation in cases in which there is no calculus. When a biliary fistula is established the more pressing danger is passed, and intraperitoneal rupture of the gall-bladder is prevented.—*Bulletin de l'Académie de Médecine*, No. 7, 1888.

TREATMENT OF MEMBRANOUS ENTERITIS.—DR. W. A. EDWARDS, of Philadelphia, in an article on membranous enteritis, says: We may consider the treatment under two headings: the prophylactic and the active, or that which is appropriate during an interval or remission, and that which will resort to during an exacerbation. It is during the remissions or intermissions that we can hope to do more for our patient's permanent good than during an actual attack; it is at this time that diet, regimen, and hygiene are indeed the sheet anchors. A careful supervision must be had of the patient's daily life, all sources of irritation are to be removed, as hæmorrhoids or uterine disease. Easily digested or even pre-digested food should be supplied, and care should be taken that undigested particles of food are not irritating the intestinal canal. As constipation usually exists, sometimes to a most stubborn degree, mild saline laxatives are usually most efficacious, or enemata may be resorted to.

Exercise for those who can stand it is of paramount importance; this, if possible, should be out of doors. Dr. Fowler most aptly says, he who stints himself in the drinking of water is dirty inside, and he also tells us that we must drink between seventy and seventy-five ounces of water per day in order to make up for the amount which is excreted by the lungs, skin and kidneys, amounting to ninety ounces a day; with the solid food we get but about fifteen ounces. Very few persons at home drink as much as that, but should they go to any of the numerous springs, in which our country is so peculiarly rich, drink five pints of water per day, lead a regular outdoor existence, breathe pure air, as many of our springs are situated in most beautiful mountain regions, where the life spent out of doors is most beneficial, the patient will be improved in health, independently of any mineral agent whatever in the water. Unfortunately, however, all of our cases will be unable to avail themselves of a course of treatment at the springs, but as there is no doubt that most of the natural mineral waters preserve their value for a long time, we can put patients through a thorough course at their own homes with the additional advantage of having the case under our own supervision.

During the acuteness of an attack opium will often be found necessary to afford relief, and possibly to check excessive secretion or hemorrhage. Belladonna in the form of the extract, Dover's

powder, subnitrate and subcarbonate of bismuth, together with local counter-irritation, all tend to abort the paroxysm, or, at least, to shorten its duration. The following remedies have been suggested: arsenic, copaiba, bromide of potassium, nitromuriatic acid, henbane, vegetable infusions, prolonged counter-irritation, electricity, turpentine, iron, cod-liver oil, oxide or nitrate of silver by mouth or by high injections, chloride of ammonium, sulphate of zinc, bichloride of mercury, chlorate of potassium, oxide of zinc, blisters, warm water enemata, nuxvomica, ergot.—*American Journal of the Medical Sciences*, April, 1888.

LACTIC ACID IN THE DIARRHOEAS OF CHILDREN.—DR. G. HAYEM, more than a year ago, called attention to the remarkable utility of lactic acid in the diarrhoeas of children. Recently, in a communication to the Academy of Medicine (*Revue de Thérap.*, February 15), he has renewed his suggestion, and presented new evidence of the value of the remedy. He finds that better results are had from larger doses than he formerly advised. In the more severe cases he has administered a 2 per cent. solution up to twenty teaspoonfuls in the course of twenty-four hours. The formula employed by him is the following:

Lactic acid (pure).....	5ss.
Syrup.....	3i.
Water.....	3ij.

The strength of this is about one minim to the teaspoonful. The quantity given will vary with the age of the subject and the nature of the attack. M. Sévestre, one of the physicians to the Children's Hospital, confirms the statements of Hayem regarding the therapeutic power of the remedy in question, and he also finds that a considerable quantity is required to effect the best results. The latest experience demonstrates that a teaspoonful of the 2 per cent. solution should be given every five minutes in the worst cases, and from this up to a teaspoonful an hour; the amount required varies with the conditions present.—*American Journal of the Medical Sciences*, April, 1888.

ARTHRECTOMY FOR WHITE SWELLING OF THE KNEE.—In the Société de Chirurgie on March 7, M. Chauvel reported four cases, operated on by DELORME, of Val-de-Grâce, in a period of five months. The patients were cured, two with fistulae, and two completely. In the latter the result seemed to be most satisfactory, but in the others, in spite of removal of all fungous synovial tissue and all the ligaments, the cure was not complete. M. Chauvel had seen one of these cases, and thought that surgeons should be very careful about operating on patients more than 40 years old. TILLAUX thinks that when the lesion is limited absolutely to the synovial membrane, arthrectomy is indicated, especially in children, in whom resection is a cause of arrest of development of the limb. [In the opinion of many good surgeons, a fistula will not remain if the tuberculous material is completely removed].—*L'Union Médicale*, No. 33, 1888.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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ANATOMICAL SCIENCE IN THE DISTRICT
OF COLUMBIA.

House Bill No. 5040, for the promotion of anatomical science and to prevent the desecration of graves in the District of Columbia, was discussed in the House of Representatives on March 26, and will, we learn, come up for final action on April 9. The Bill is not peculiar in any respect, and differs but little from those now in force in most of the States in which there are medical colleges. It provides, briefly, that the bodies of such deceased persons as are required to be buried at public expense shall be delivered to the medical colleges of the District of Columbia, under certain conditions; among which are, that the person thus dead has not requested burial, that public notice shall be given of such death for forty-eight hours previous to delivery to the colleges, and that the person was not an honorably discharged soldier or sailor or member of the U. S. Marine Corps, and that the colleges must bear the expenses of the transfer of the bodies.

At first sight one would not suppose that it would be a difficult matter to have such a wise and necessary bill pass the House of Representatives. The ten pages of the *Congressional Record*, of March 27, in which the discussion on the Bill is printed, show that objections can be and are raised where there is really no room for objections. But let us notice these objections more closely.

The *first* objection was that it was legislation against the poor. That is based upon the assumption that all the unclaimed bodies, and all those that

are to be buried at the public expense are those of poor people, and leaves out of sight the fact that it is just as easy for a poor person to request burial as for an unknown millionaire to do so. In fact, the clause, "such deceased persons as are required to be buried at the public expense" is a leveling clause: it effectually and absolutely shuts out any idea of class legislation. And more than this; it assumes, what is true, that an unclaimed body, and that of a person that has made no request concerning his remains, is in reality the property of the State, and that the State has a right to utilize for the best interests of the public. The State may bury or cremate such a body, as it sees fit; or it may hand it over for proper and legal dissection if the public interests are best subserved in that manner. Of all bodies, those that "are required to be buried at the public expense" are the ones to be handed over to the dissecting-rooms in the interests of the public and of humanity.

The *second* objection was that the Bill would not prevent grave-robbing. Aside from the fact that a punishing clause for grave-robbing was added to the Bill as an amendment, it would be extremely difficult to find such practice in existence when bodies could be obtained more easily, more cheaply, and with no risk to anyone of being shot or otherwise injured while robbing a grave.

Third objection: "Human dead bodies are sacred, and should not be mutilated except for necessity." In the sense in which the word is used here, dissection is not mutilation. Medical students do not tear the limbs from a dead body from mere wantonness. Each student knows that he has to learn the anatomy of the human frame, and that no material must be wasted. Such "mutilation" as is done in dissecting rooms is "for necessity," and it may be, when the student shall hold in his hand the very life of a sick or injured human being, for *dire* necessity. None of the "sacred rights" of a dead body are violated in a dissecting-room. Even when the grave is robbed, it is not the rights of the dead, but of the *living*, that are violated. And while it is a well-settled principle that there is no such thing as property in a dead body, civilized Governments recognize that it is a matter of public policy to allow a right in so far that friends or relatives may claim a body and decently dispose of it. Mr. McAdoo of New Jersey, was the author of this objection, and he also said: "Science, in a utilitarian age, selects its victims by reason of their poverty. . . . This Bill, with a sort of refinement of cruelty, prescribes that persons dying in the almshouses or asylums, unless of their own accord they request the privileges of a Christian burial, shall

be handed over to the savage, soulless science of the medical schools." Inasmuch as a dead body—after death—can be neither a victim of anything, nor have poverty nor riches, it is somewhat difficult to see the force of these words. And under this Bill, science does not select its material by reason of "poverty," but because there are no friends to claim that body, because the owner of the body did not, before dying, request burial, and because it is necessary for the health and life of all the millions of this country, alive and yet to be born, that some such material be at the command of "the savage, soulless science of the medical schools;" and from considerations of public policy and public interests, it is better to take the material mentioned in the Bill than any other—certainly better than to have graves robbed of their contents.

"Imagine for a moment," says Mr. McAdoo, "a poor, homeless, friendless, suffering man, in the very throes of dissolution, his faculties deserting him, the earth and its ties receding, and just as he is about to penetrate the veil of the tremendous future, he is obliged, in order to preserve his body, the temple of his soul, from a dissecting-table, to collect his thoughts and cite to the attendants, if any there be, an act of Congress passed for the District of Columbia . . . asking that his body may not be handed over to the surgeons to be mutilated after death." It is very difficult to imagine any such thing, if we remember that all the man has to do is to say or indicate that he wishes his body to be buried. He need not spend a moment's thought on Congress or any of its acts, or on the District of Columbia.

The member from New Jersey says further, in reply to a question as to the necessity for subjects for dissection: "I do not know. They have dissected so many and for such a long time, and there have been made such perfect charts and casts showing the whole science of anatomy, that it would seem scarcely necessary that this process of dissecting bodies should continue. . . . from an unprofessional view I do not see the necessity of continuing it further. . . . Science will find means to disseminate itself." It is somewhat difficult to regard anatomical science as a kind of ferment or yeast that can enter a given number of medical students and leaven the whole by a process of self-dissemination. Science cannot always disseminate itself without material and assistance; and anatomical science is now before the House of Representatives asking for a legal and unobjectionable means of disseminating itself by the passage of this Bill. In so far as the dissections that have already been made, and the charts and casts can take

the place of dissections, and as regards the doubts of any further necessity for dissections, it may be said that the same argument may be used for the entire abolition of Congress. There are, apparently, laws, acts, and statutes enough to last the country for several centuries. Why not govern the country with these for awhile? Why should school-children be made to draw maps, seeing that maps and globes are already in existence? The absolute necessity of anatomical study by means of dissections is so apparent that it would be a waste of time to discuss the matter. We sincerely hope, for the sake of his personal comfort, health, limbs and life, that Mr. McAdoo may never fall into the hands of a doctor who has learned his anatomy from charts and casts.

Fifth objection: "The Bill throws the burden of securing his body from dissection upon the person about to die." After the person is dead what difference can it make to him that his body is in a dissecting-room? The Bill, and the general custom of handing dead bodies over to relatives and friends, are for the benefit of the *living*, not of the dead. It makes no difference to a dead man what becomes of his body, and if he have no friends no one's feelings and sentiments are hurt if the body be sent to a dissecting-room. Such a bill as the one under consideration is an act for the benefit of the living in two ways: It gives assurance to people that the graves of their dead friends and relatives are not violated; and it provides for the living that come under the care of the doctor by giving the medical students the means of learning by actual dissection the structure of the human body. Such knowledge cannot be learned in a practical way, nor for practical purposes, from any charts or casts. If it could it may be said to be a matter of certainty that dissection, which is not a pleasant duty, would not be practiced.

Sixth objection: "Why should this American Congress suspend the consideration of more important measures and come to a dead stop in order to enact a law of this character?" For the simple reasons that the District of Columbia is under the direct control of the American Congress, and that such an act is a necessity for the inhabitants of the District, as well as for the medical colleges. To enter one of the medical services of the United States the candidate must pass an examination in practical anatomy. In refusing to pass this Bill, therefore, Congress will simply legislate against all students of medicine in the District of Columbia, unless they are allowed to continue to receive their dissecting material from grave-robbers. It would be another case of "bricks without straw." The civilized Governments of the

whole world have long ago recognized the necessity for furnishing dissecting material to medical students. Let us at least keep abreast of the march of civilization. The laws punish a doctor for any mishap arising from his negligence or ignorance, if suit be brought. And the laws should remove all obstructions in the way of the medical student's obtaining a proper and scientific knowledge of his profession. The medical profession of this country, and of the whole world, is a unit in believing that such bills as the one before the House are a necessity.

INVERSION IN SUSPENDED ANIMATION FROM ANÆSTHETICS.

In a paper entitled "A very Valuable Lesson for those who use Anæsthetics," read before the Baltimore Academy of Medicine on December 6, 1887, DR. JULIAN J. CHISOLM makes a strong argument in favor of treating suspended animation from anæsthesia by suspending the patient with the head downward, and relates several cases that recovered in his own practice under this treatment. In one case particularly, that of a child 3 years of age, upon whom Dr. Chisolm was operating for cancer of the left eye, the value of the practice was fully shown; three or four times anæsthesia had to be stopped while the child was held head downwards to reanimate it; and the operation was finally finished with the child suspended in this position so that it might be brought fully under the influence of chloroform without danger. In all, the child was suspended in the inverted position for about three-quarters of an hour.

Dr. Chisolm has used chloroform in about 10,000 cases, and without a death. He has had some cases similar to the one mentioned, but they have been revived by inversion. He never uses ether, or has not used it once in the last ten years. In the administration of chloroform he has certain rules: "All clothing must be loose around the neck. With adults an ounce of whisky is given in advance, but in cases of persons under 30 years of age this cardiac stimulant is omitted, unless the patient be feeble. Chloroform is administered with the patient lying on his back, and as soon as narcosis is induced the pillow is taken from under his head, so that he lies in an absolutely horizontal position. Should snoring occur, indicating some difficulty in pharyngeal breathing, the chin is drawn forcibly upward. This elevation pulls the anterior wall of the pharynx, with the hyoid bone and the root of the tongue, forward, making for the air a clear and straight passage

from the nose into the lungs. By this movement of the chin respiration becomes immediately quiet and easy. The pulling of the chin is a much more efficient and convenient means of pulling the root of the tongue forward than by pulling out the tongue with a dressing forceps. It is not always easy at this stage of anæsthesia to get into the mouth, as the lower jaw-muscles may not be relaxed. A proper tongue-forceps is not often at hand, and to tear the tongue-substance with sharp-toothed and yet slipping instruments, with the soreness and swelling which subsequently follow, is an abominable practice that should be abolished. The patient's chin and your own hands are always present, and it only needs knowledge of the method to apply it, and to secure prompt and speedy relief."

The only inhaler that Dr. Chisolm uses is a towel folded in cone-form, with the apex of the cone open, so as to permit air to mingle with the chloroform vapor. The surgeon watches the face for signs of approaching complication: "If the ears remain pink, the heart and lungs must work properly; therefore, there is no need for feeling the pulse. Any failure on the part of either of these organs can be seen in the change of the complexion more quickly than it can be felt at the wrist." Of course one point of great safety in ophthalmic-surgical work is the fact, that when anæsthesia is complete the administrator must stop, and get out of the way of the operator; hence, the administration of the anæsthetic cannot be injuriously continued. Dr. Chisolm has operated for cataract 1,500 times. It is well-known that cataract patients are usually old, and that most frequently they are subjects of decided senile changes; the average age of cataract patients would probably be about 60 years. Before cocaine came into use Dr. Chisolm gave chloroform in all cataract cases, and must have given it to a large number of patients with fatty hearts. When a patient has very feeble heart-pulsation, with irregularity, he increases the amount of whisky administered in advance of chloroform inhalation. "I consider it much the safer practice to put whisky into the stomach, where it is ready for use if wanted, and where it can do no harm if it is not needed." In a word, in regard to the selection of cases for anæsthesia, he says: "No pathological lesion in any other parts of the body deters me from the use of chloroform should an eye-operation be required."

To return to the subject of inversion in suspended animation, Dr. Chisolm thinks, from his own experience, that many of the dead from chloroform might have been resuscitated had the surgeon immediately

hung the inanimate body up by the feet, instead of "wasting time in applying hypodermic injections, cold-water splashings, spanking, fanning, electricity, or even attempts at artificial respiration. Do any or all of these things if you will, but hang up the patient first, and that instantly, as soon as the heart and lungs fail. It is the horizontal position that is fatal in chloroform poisoning, and leads to death if the body is kept in it, as all the reports of fatal cases with chloroform show." What Dr. Chisolm says, agrees perfectly with the results of Nélaton's experiments with chloroformed rats: those that, after thorough narcotization, were hung up by the tails would slowly revive, while those left lying on the table died. If, after being hung up, the rat was placed on the table to soon, breathing would again cease, and the rat would die unless suspended again. When the rat was not already dead suspension was the only thing that would restore it to life.

AN INTERNATIONAL DENTAL CONGRESS.

The *Dental Review*, of March 15, 1888, in advocating the holding of "An International Dental Congress at Paris, France, in September, 1889," disclaims any intention of interfering with a Section of Dental and Oral Surgery in connection with the Tenth International Medical Congress to be held in Berlin, 1890. Notwithstanding this disclaimer, it is difficult to see how the editor of the *Review* could more directly and certainly interfere with the organization of an efficient and successful Dental Section of the International Medical Congress in Berlin, than by persisting in his scheme of forestalling it, by a separate International Dental Congress the year preceding in Paris. The full recognition of properly educated Dentists by the successful organization of a Section of Dental and Oral Surgery, as a part of the great International Medical Congress at London, in 1881, and its repetition with still greater success as a part of the International Medical Congress at Washington, in 1887, leaves no room for doubt about the purpose of organizing a similar Section in the next Congress at Berlin, and of its permanent recognition as a legitimate department of the great field of medicine and surgery. Then why should not every enlightened member of the profession use his influence for perfecting the unity of all the departments, and the promotion of such harmony in the organization as will afford mutual support and mutual advancement. There is no interest, social, scientific or practical, to be promoted by an exclu-

sive International Dental Congress in Paris next year, that could not be more efficiently promoted by a Section of the International Medical Congress the following year at Berlin. The published proceedings of a Congress of Dentists will reach but few outside of its own members, while the work of a Section becomes a part of the published transactions of the general Congress, and thus receives a wide distribution to members of all other Sections, and *vice versa*, the work of all other Sections becomes the property of the members of the Dental Section. So true it is, that coöperation and union imparts strength and diffuses knowledge, while segregation and exclusiveness limits both.

MEMBERSHIP IN THE ASSOCIATION.

As this number of *THE JOURNAL* will be placed in the hands of a large number of medical men that are not members of the American Medical Association, we wish to call attention to the way in which membership can be gained.

State and County Societies can send a certain number of delegates to each meeting, who thus become members, and retain permanent membership thereafter so long as their annual dues are paid.

Membership can also be obtained by procuring of the Secretary and President of such Societies a certificate of membership in good standing. This certificate, together with the annual dues of five dollars, must be sent to the Treasurer of the Association. A permanent membership can be gained in this way at any time. There is no limit to the number of such certificates that the officers of a Society may issue to its members. Membership, however gained, entitles one to this weekly journal without extra charge. In it are published all the proceedings of the meetings of the Association, all the papers read before its Sections, as well as a very large number of papers from other sources, and editorials, proceedings of the leading societies of this country, foreign and domestic correspondence, book notices, and miscellaneous news.

Those desiring to subscribe to *THE JOURNAL*, but who do not wish to become members of the Association, can do so by forwarding to the editor the price of subscription, five dollars.

FOREIGN SURGICAL INSTRUMENTS.

The New York Neurological Society, at its last regular meeting, says the *Medical Record*, voted

unanimously not to indorse the resolutions of the Georgia State Medical Society, asking for the removal of all duties from surgical instruments and supplies. The ground was taken that the charges made against native instrument-makers were too intemperate and sweeping. Surgeons were better served by having their instrument-makers at hand rather than in Europe.

On the other hand the Medical Society of the County of New York, at the meeting of January 24, *Resolved*. That the Medical Society of the County of New York urge upon Congress that in the cause of humanity the import duty should be removed from all medicines, medical and surgical appliances, and every thing used in the treatment and diagnosis of disease.

So long as the fact remains that foreign surgical instruments and appliances, at the same price, are far better than those made in this country, it is difficult to see what the character of American instrument-makers has to do with the case. And while it may be more convenient to have an instrument-maker just around the corner than in Europe, if we can get the better instrument of foreign make, at a lower price than now, from the shop around the corner, are we not better served? And if this will induce our own makers to make better instruments at a lower price, do we not obtain "the greatest good for the greatest number?"

SURGEON-GENERAL OF U. S. NAVY.—The regular term of service of Dr. F. M. Gunnell as Surgeon-General of the Navy expired on the 26th of March, 1888, and Dr. JOHN M. BROWNE has been nominated as his successor by the President. Dr. Gunnell having arrived at the age of 62, and rendered faithful service over 40 years, is entitled to retire with the relative rank of Commodore. Dr. Brown, who succeeds him, entered the medical corps of the Navy in 1853, and was commissioned as Medical Director in 1878. He is eminently qualified for the important position to which he has been promoted.

WILLIAM BENJAMIN GOLDSMITH, Superintendent of the Butler Hospital for the Insane, at Providence, R. I., died on March 21 of acute pneumonia, aged 34 years. He was graduated from the College of Physicians and Surgeons of New York in 1877, and soon afterwards became second assistant in the Bloomingdale Asylum. After a period of study abroad he was made first assistant, and in 1881, when 28 years old, he was made Superintendent of the

Insane Asylum at Danvers, Mass. In 1886 he was called to the Butler Hospital. He was a most earnest, useful, and promising member of the profession.

THE CINCINNATI MEETING OF THE ASSOCIATION.—As will be seen from the programme published in this number of THE JOURNAL, the officers of the Association have been diligently performing their work. The Committee of Arrangements also are to be commended for the zeal they have shown in endeavoring to provide pleasant and convenient accommodations for the meeting of the general sessions of the Association and of its Sections. They have also in store a most pleasant social programme, the details of which are not yet officially announced. Together with the programme, we publish to-day the arrangements with the railroads for reduced rates, and a list of hotels in Cincinnati, and other information that will be of interest to those about to attend the meeting. A very large attendance has been prophesied, and the excellent programme that is offered cannot fail to attract many new members. At the last meeting 1,300 were present, we hope this year the number will be increased by at least one-third.

CHANGES IN THE FACULTY OF THE MEDICAL DEPARTMENT OF GEORGETOWN UNIVERSITY.—DR. JOSEPH TABER JOHNSON, who has heretofore held the position of Professor of Obstetrics and Gynecology in the Medical Department of Georgetown University, having resigned the Professorship of Obstetrics, the chair has been divided into two separate professorships, Dr. Johnson retaining that of Gynecology, while Dr. P. J. MURPHY has been appointed Professor of Obstetrics.

MEDICAL COLLEGE APPOINTMENTS.—Nicholas Senn, M.D., of Milwaukee, Wis., has been appointed Professor of the Principles of Surgery and Surgical Pathology, in the Rush Medical College; Frank T. Andrews, M.D., has been appointed Professor of Histology in the Chicago Medical College, and Henry F. Lyster, M.D., of Detroit, has recently been appointed to the Chair of Practical Medicine in the University of Michigan made vacant by the death of Professor A. B. Palmer.

THE TEXAS STATE MEDICAL ASSOCIATION will hold its next annual meeting in Galveston, from the 24th to the 27th of April, 1888. A full and profitable meeting is expected. J. F. Y. Paine, M.D., Galveston, is Chairman of the Committee of Arrangements.

ASSOCIATION ITEMS.

LIST OF OFFICERS AND PROGRAMME

Of the Thirty-Ninth Annual Meeting, to be held in Cincinnati, May 8, 9, 10, and 11.

GENERAL OFFICERS.

President.—A. Y. P. Garnett, Washington, D. C.
Vice-Presidents.—Duncan Eve, Nashville, Tenn.; Darwin Colvin, Clyde, N. Y.; C. J. O'Hagan, Greenville, N. C.; A. Stidman, Denver, Col.
Treasurer.—Richard J. Dunglison, Philadelphia, Pa.

Permanent Secretary.—W. B. Atkinson, Philadelphia, Pa.
Assistant Secretary, Joseph Ransohoff, Cincinnati, Ohio.

Librarian.—C. H. A. Kleinschmidt, Washington, D. C.

Chairman of Committee of Arrangements.—W. W. Dawson, Cincinnati, Ohio.

Sub-Committees of Arrangements.

1. Section-Work, J. T. Whittaker, Chairman.
2. Halls and Decoration, B. Stanton, Chairman.
3. Entertainments, N. P. Dandridge, Chairman.
4. Exhibits, J. C. Culbertson, Chairman.
5. Programme, J. Ransohoff, Chairman.
6. Reception, J. T. Whittaker, Chairman.
7. Finance, S. C. Ayres, Chairman.
8. Registration, Jas. M. French, Chairman.
9. Printing and Invitations, J. C. Culbertson, Chairman.
10. Transportation and Hotel, Geo. Purviance, Chairman.

PROGRAMME OF GENERAL SESSIONS.

The General Meetings will be held in the Cincinnati Music Hall and the Sectional Meetings in adjoining rooms in the same building.

FIRST DAY, MAY 8, 11 A.M.

Meeting called to order by Dr. W. W. Dawson, Chairman of the Committee of Arrangements, Prayer.

Address of Welcome.

Announcement of Programme of entire Session.

Annual Address by President A. Y. P. Garnett, of Washington.

Call for volunteer papers and their appropriate reference.

New and miscellaneous business.

Notification for the appointment of the Nominating Committee.

SECOND DAY, MAY 9, 10 A.M.

Report of Committee of Arrangements.

Address on General Medicine, by Professor Roberts Bartholow, of Philadelphia.

Annual Report of the Board of Trustees, by J. M. Toner, M.D., Chairman.

Report of Special Committee on Dietetics.

Consideration of proposed amendments to the Constitution.

Announcement of Nominating Committee.

THIRD DAY, MAY 10, 10 A.M.

Report of Committee of Arrangements.

Address on General Surgery, by E. M. Moore, M.D., of Rochester.

Report of Committee on Rush Monument, by A. L. Gihon, M.D., Chairman.

Report of Treasurer, R. J. Dunglison, M.D.

Report of Librarian, C. H. A. Kleinschmidt, M.D.

Report of Committee on Necrology, by J. M. Toner, M.D., Chairman.

FOURTH DAY, MAY 11, 10 A.M.

Report of Committee of Arrangements.

Address on State Medicine, by H. P. Walcott, M.D., of Boston.

Final Report of Nominating Committee.

Report of Standing Committee on Meteorological

Conditions, by N. S. Davis, M.D., Chairman.

Report of Special Committee on Criminality, of Fœticide and Measures for its Prevention.

Report of Special Committee on Duties commonly exercised by Coroners.

Reports of Secretaries of Sections.

New and miscellaneous business.

PROGRAMME OF SECTIONS.

Section of Practical Medicine, Materia Medica and Physiology.

Chairman, ———

Secretary—N. S. Davis, Jr., Chicago.

FIRST DAY, MAY 8.

1. TOPIC—Pneumonia, Etiology, Pathology and Treatment.

a. "The Mechanism of Pneumonia and its Treatment," by C. W. VanBibber, Baltimore.

b. Henry Hartshorne, Philadelphia.

c. James L. Whittaker, Cincinnati.

d. N. S. Davis, Chicago.

General Discussion.

2. "Treatment of Empyema," by Wm. C. Dabney, University of Virginia.

3. "On the Hippocratic Operation for Empyema, with Illustrative Cases," by Frank Woodbury, Philadelphia.

General Discussion.

4. E. O. Shakespeare.

SECOND DAY, MAY 9.

1. TOPIC—Diagnosis and Treatment of Diseases of the Stomach.

a. "Some Practical Remarks on Diagnosis of Diseases of the Stomach," by Dr. Wm. Pepper, Philadelphia.

b. F. C. Shattuck, Boston.

c. J. Adams Allen, Chicago.

General Discussion.

2. "Observations upon Nutrition," (with Especial

¹ The late Dr. A. B. Palmer was Chairman-elect of this Section.

Reference to Origin of Fat, Urea and Animal Heat,) by Henry C. Chapman, Philadelphia.

3. "Septic Dysentery," by Bedford Brown, Alexandria, Va.

4. "Food in Nervous Affections," by Ephraim Cutter, New York.

5. Morton Prince, Boston.

THIRD DAY, MAY 10.

1. "Albuminuria and its Relation to Life Insurance," by James Tyson, Philadelphia.

2. C. W. Purdy, Chicago.

3. "Evolution of the Cystic Kidney," by I. N. Danforth, Chicago.

4. a. "The Differential Diagnosis between Central Nervous and Peripheral Nervous Affections,"

b. "The Iodoform Cap in Tubercular Meningitis," by E. C. Spitzka, New York.

5. "Cerebro-Spinal Meningitis," by J. McFadden Gaston, Atlanta, Ga.

FOURTH DAY, MAY 11.

1. "Relation of the Solar Plexus to Certain Obscure Forms of Disease," by J. Adams Allen, Chicago.

2. "Sympathetic Nervous System in Disease," by John North, Keokuk, Iowa.

3. "Abortive Treatment of Typhoid Fever," by L. D. Woodbridge, Williamstown, Mass.

4. "Clinical Experience with so-called Typho-malarial Fever," by J. B. Marvin, Louisville, Ky.

5. H. N. Moyer, Chicago.

6. "A Second Paper on Naphthol," by J. V. Shoemaker, Philadelphia.

Section on Obstetrics and Diseases of Women.

Chairman—Ely Van de Warker, Syracuse, N. Y.
Secretary—E. W. Cushing, Boston, Mass.

The Address of the Chairman, "How Gynecology is Taught," by Ely Van de Warker, Syracuse, N. Y.

"Separation of the Symphysis Pubis in Labor, and its Treatment," by R. B. Bontecou, Troy, N. Y.

"A Plea for Early Operative Interference in Cases of Obscure Pelvic Pain, and Recurrent Attacks of Pelvic Inflammation in Women," by Rufus B. Hall, Cincinnati, O.

"Exploratory Laparotomy," by Henry O. Marcy, Boston, Mass.

"The Management of Extra-Uterine Pregnancy," by A. M. Johnson, Danville, Ky.

"Observations on the Technique of Vaginal Hysterectomy, with Report of Cases," by Chas. A. L. Reed, Cincinnati, O.

Section on Surgery and Anatomy.

Chairman—Donald McLean, Detroit, Mich.

Secretary—B. A. Watson, Jersey City, N. J.

Address by the Chairman, "Some Thoughts on Retrospective and Prospective Surgery," Donald McLean, Detroit, Mich.

"The Appendix Vermiformis; its Functions, Pathological Changes, and Treatment," by Henry Hollingsworth Smith, Philadelphia, and

J. Ransohoff, Cincinnati, O.; J. McF. Gaston, Atlanta, Ga.

Discussion.

T. G. Morton, Philadelphia; H. C. Chapman, Philadelphia; Elisha H. Gregory, St. Louis, Mo.; Reed Brockway Bontecou, Troy, N. Y.

"Intestinal Obstruction in its Surgical Aspects," Chas. Bingham Penrose, Philadelphia, and

R. Harvey Reed, Mansfield, O.

"Rectal Insufflation with Hydrogen Gas as an Infallible Diagnostic Measure in ascertaining the existence of Visceral Injury of the Gastro-Intestinal Canal in Penetrating Wounds of the Abdomen. Illustrated by Three Experiments," by N. Senn, Milwaukee, Wis.

"The Surgical Advantages of the Buried Animal Suture and its Adaptability to Special Purposes," by Henry O. Marcy, Boston.

"A New Method of Excision of the Intestine," by Henry H. Mudd, St. Louis.

Discussion.

Hunter McGuire, Richmond, Va.; P. S. Connor, Cincinnati, O.; S. H. Weeks, Portland, Me.

"Electrolysis as a Prime Agent in the Removal of Nasal and Pharyngeal Neoplasms," by D. S. Campbell, Detroit, Mich.

"An Antiseptic Surgical Cabinet," by H. Landis Getz, Marshalltown, Iowa.

Section on State Medicine.

Chairman—H. B. Baker, Lansing, Mich.

Secretary—S. T. Armstrong, New York.

Address by the Chairman, H. B. Baker.

"The Causation of the Essential Fevers," by Victor C. Vaughan, Ann Arbor, Mich.

"The Internal Origin of Fevers," by J. A. Larabee, Louisville, Ky.

"Atmospheric Temperature and Intermittent Fever," by Henry B. Baker, Lansing, Mich.

J. N. McCormack, Bowling Green, Ky.

"Report of Committee on Form of Law for Regulation of Practice of Medicine," by Perry H. Millard, Chairman.

A paper by E. O. Shakespeare, Philadelphia.

"Recent Discoveries and Researches with Regard to a Common Cause of certain Infectious Diseases," by C. W. Chancellor, Baltimore, Md.

"Should the National Government Defend our Ports Against the Invasion of the National Enemy, Contagious Disease?" by Benjamin Lee, Philadelphia, Pa.

"House Drainage," by Joseph F. Edwards, Philadelphia, Pa.

"Cremation of Garbage," by J. Berrien Lindsley, Nashville, Tenn.

"Eastern Carolina as a Residence for Tuberculous Patients," by J. M. Baker, Tarboro, N. C.

"Personal Prophylaxis Against Malarial Disease," by Geo. H. Rohé, Baltimore, Md.

"Hygiene of Infancy and Childhood," by F. B. Greenley, West Point, Ky.

Section on Ophthalmology, Otology and Laryngology.

Chairman—F. C. Hotz, Chicago, Ill.

Secretary—Edward Jackson, Philadelphia, Pa.

FIRST DAY.

Address by the Chairman, F. C. Hotz.

"Melanotic Disease of the Conjunctiva and Epithelial tissue, with Five Illustrations," by Rob. Sattler, of Cincinnati.

"Ocular Troubles Influenced by Nasal Diseases," by L. H. Taylor, of Wilkesbarre, Pa.

"Binocular Astigmatism," by H. Culbertson, of Zanesville, Ohio.

"The $\frac{1}{2}$ Dioptric Cylinder Lens the Most Useful of the List of Cylinders," by J. J. Chisolm, of Baltimore.

"The Treatment of Strabismus due to Paralysis or Extreme Over-correction with Loss of Motion," by A. E. Prince, Jacksonville, Ill.

"The Size and Illumination of Test-type," by E. Jackson, Philadelphia.

SECOND DAY.

"Some Practical Suggestions Regarding Certain Anomalies of the Ocular Muscles," by George T. Stevens, of New York.

"Gummata of the Ciliary Region," by S. C. Ayres, of Cincinnati.

"On Nutrition, or the Constitutional Treatment of Diseases of the Ear," by Laurence Turnbull, of Philadelphia.

"Some Remarks on Diseases of the Labyrinth," by Francis Dowling, of Cincinnati.

"The Bougie in Catarrhal Inflammations of the Middle Ear," by W. Cheatham, of Louisville.

THIRD DAY.

"Reflex Nasal Cough, with Report of Cases," by Max Thorne, of Cincinnati.

"Reflex Phenomena in Childhood caused by Rhinitis," by J. A. Stucky, of Lexington.

"Naso-Pharyngeal Fibromata," by E. F. Ingalls, of Chicago.

"An Interesting case of Fibroma of the Larynx," by Jos. Eichberg, of Cincinnati.

"Tubercular Laryngitis," by W. E. Welsh, of Grand Rapids, Mich.

"Illustrative Points in the Examination of the Nose and Throat," by Carl von Klein, of Dayton, O.

FOURTH DAY.

"Tobacco Amblyopia," by A. R. Baker, of Cleveland, O.

"The Advantages of Leaving One Eye Open during the After-treatment of Cataract Cases," by J. J. Chisolm, of Baltimore.

"Staphyloma of the Region of the Macula," by E. Jackson, of Philadelphia.

"A Plea for the Better Recognition of the Oculist in the Service of the U. S. Pension Department," by J. W. Wright, of Columbus.

Exhibition of instruments and apparatus.

Section on Diseases of Children.

Chairman—F. E. Waxham, Chicago.

Secretary—W. B. Lawrence, Batesville, Ark.

"Infant Feeding. 1. Foods for Prematurely Born Children; 2. Mixed Diet; 3. Artificial Foods; 4. Feeding in Acute Disease," by C. W. Earle, Chicago.

Discussion opened by Wm. H. Parrish, Philadel-

phia; M. P. Hatfield, Chicago; J. Lewis Smith, New York; Wm. Perry Watson, Jersey City; J. T. Whitaker, Cincinnati; J. H. Ripley, New York; I. N. Love, St. Louis; G. Wheeler Jones, Danville; J. A. Larrabee, Louisville.

"Treatment of Pseudo-Membranous Laryngitis."

Discussion opened by J. Lewis Smith, New York; Fordyce Barker, New York; C. W. Earle, Chicago; Wm. Pepper, Philadelphia.

"Tracheotomy in Pseudo-Membranous Laryngitis."

Discussion opened by C. G. Jennings, Detroit; Chas. T. Parkes, Chicago; I. H. Hance, New York; J. M. Keating, Philadelphia; W. E. Casselberry, Chicago; J. H. Ripley, New York.

"Report on Intubation in Pseudo-Membranous Laryngitis," by J. O'Dwyer, New York, or F. E. Waxham, Chicago.

Discussion opened by E. F. Ingalls, Chicago; M. J. Stern, Philadelphia; L. H. Dunning, South Bend; C. E. Denhardt, New York.

"The Surgical Treatment of Epyæma," by D. A. K. Steele, Chicago.

"Hepatic Incompetence in Children," by M. P. Hatfield, Chicago.

"Chorea," by Geo. Wheeler Jones, Danville, Ill.

"Antifebrin as an Antipyretic in the Treatment of Febrile Diseases of Children, with a Report of Fifty Cases," by F. J. Parkhurst, Danvers, Ill.

"Some Points Concerning the Etiology and Treatment of Fevers of Childhood," by J. A. Larrabee, Louisville, Ky.

Section on Dental and Oral Surgery.

Chairman—J. Taft, Cincinnati.

Secretary—E. S. Talbot, Chicago.

Address of Chairman, J. Taft.

"Fracture of the Superior Maxilla and Upper Bones of the Face; Treatment by the Aid of the Inter-dental Splint, with two Illustrations," by John Marshall, Chicago.

"Etiology of Irregularities of the Teeth;" "Development of the Superior Maxilla in the Idiot, Deaf and Dumb, and Blind and Insane," by Eugene S. Talbot, Chicago.

"Treatment of Irregularities of the Teeth," by Geo. W. Keely, Oxford, Ohio.

"Dentogeny," by W. C. Brittan, Detroit, Mich.

Discussion of this paper will be opened by M. H. Fletcher, Cincinnati.

"Heredity in its Relation to the Teeth," by A. O. Rawls, Lexington, Ky.

A. E. Baldwin, Chicago, Ill.

Section on Medical Jurisprudence.

Chairman—E. M. Reid, Baltimore, Md.

Secretary—C. B. Bell, Suffolk, Iowa.

Address by the Chairman of the Section, E. M. Reid, Baltimore.

"Paralytic States, their Relation to Testamentary Capacity," by E. C. Spitzka, New York.

"Medical Jurisprudence in Relation to Wills," by Richard Gundry, Baltimore.

"Expert Testimony in Medical Jurisprudence," by Orpheus Everts, College Hill, O.

"Feticide, its Increase, and Inadequacy of Law for its Prevention and Punishment," by H. C. Markham, Independence, Ia.

"Some Phases of the Civil Law in relation to the Development of Man," by J. W. C. Cuddy, Baltimore.

"Some Points in the Medical Jurisprudence of Insanity," by E. N. Brush, Philadelphia.

"The Medico-legal Relation of the Inebriate to Society," by I. N. Quimby, Jersey City, N. J.

"The Influence of Experimental Science upon Law," by Clark Gapen, Chicago.

"The Relation of Meconeuropathia, Opium Toxicemia and the Opium Psycho-Neurosis to Law," by C. H. Hughes, St. Louis.

"The Medico-legal Relations of Hysteria," by D. R. Brower, Chicago.

"Alcoholic Trance; its Medico-legal Relations," by T. D. Crothers, Hartford, Conn.

Section of Dermatology and Syphilography.

Chairman—L. D. Bulkley, New York.

Secretary—F. Dunlap, Danville, Ky.

Address of Chairman, L. D. Bulkley.

"The Use of Arsenic in Dermatology," by B. M. Ricketts.

Those desirous of reading papers in any of the Sections should at once send the title of their paper to W. W. Dawson, M.D., Cincinnati, and to the Chairman of the Section in which they wish to read it.

RAILROAD ARRANGEMENTS.

The Committee on Railroads have secured a reduction on the certificate plan from all railroads entering the city of Cincinnati. The rate will be full fare coming to the meeting of the American Medical Association and one-third fare returning. Physicians will please ask for a blank certificate at the railroad office at the time they purchase their tickets, which certificate will entitle the holder thereof to a one-third rate returning. Drs. Geo. Purviance and William Judkins are the local subcommittee in charge of railroad and hotel accommodations.

HOTELS OF CINCINNATI.

Gibson House, Walnut St. between Fourth and Fifth; \$3 to \$5 per day.

Burnet House, Vine and Third Sts.; \$3 to \$5 per day.

Grand Hotel, Fourth St. and Central Ave.; \$3 to \$5 per day.

The St. Nicholas, Fourth and Race Sts.; rooms \$1.50 to \$4 per day. European plan.

Palace Hotel, Sixth and Vine Sts.; \$2 and \$2.50 per day.

Hotel Emery, Vine St. between Fourth and Fifth; rooms \$1 to \$2.50 per day. European plan.

St. James Hotel, Fourth St. near Main; \$2 to \$2.50 per day.

Dennison House, Main and Fifth streets. \$2 and \$2.50 per day.

Walnut Street House, Walnut between Sixth and Seventh streets. \$2 and \$2.50 per day.

Saint Clair Hotel, Sixth and Mound streets. \$3.50 to \$5.00 per day.

Hunt Hotel, Vine between Fourth and Fifth streets. \$1.75 per day.

Crawford House, Sixth and Walnut streets. \$1.50 to \$2.00 per day.

Geneva Hotel, Sixth and Race streets. \$1.25 to \$1.50 per day. Rooms, European plan, 50 cts. to \$1.00 per day.

Galt House, Sixth and Union streets. \$1.50 per day.

The following boarding houses may be mentioned:

Mrs. S. G. Morris, Seventh and Plum streets. \$2 and 2.50 per day.

Mrs. Rathburn, 119 Broadway. \$2 and \$2.50 per day.

Mrs. W. P. Knight, 105 Broadway. \$1.50 and \$2.50 per day.

Mrs. Saffern, 88 East Fourth street. \$1.50 and \$2.50 per day.

Mrs. Fennell, 102 West seventh street. \$1.50 per day.

OBJECTS OF INTEREST IN CINCINNATI.

Admission to the following places of interest by simply showing membership cards can be had by members and their wives.

The Art Museum in Eden Park. Reached by Highland House cars at Fifth and Walnut streets. Its attractions vie with the best collections even of the old world, and hours can be profitably spent in its inspection.

The Museum of Natural History on Broadway near Third is also well worthy of a visit.

The Zoological Gardens, located in the North part of the city, and covering over sixty acres of beautiful park, is reached by the Cincinnati Northern R. R., depot at Court and Broadway, or by the Vine street line of cable cars. These gardens, we are proud to say, have the finest collection of animals and birds in this country. The pair of giraffes owned by the garden, and the polar and grizzly bears are said to be the finest specimens of these animals in captivity. The collection of birds of plumage and carnivorous animals is very large and fine. A day can be profitably spent in the gardens by delegates and their wives.

The Rookwood Pottery, located at 207 Eastern Avenue, is reached by the Elm street line of street cars. The Rookwood was established through the liberal beneficence of Mrs. Storer to afford facilities for the manufacture of the finest grades of pottery ware, and especially to cultivate a growing taste for the beautiful in art as illustrated in home adornment. As this industry has been entirely conducted by ladies, it will be of special interest to the wives of delegates.

The Cuvier Club Rooms, on Longworth near Race, contains a museum of prepared specimens of

fish, birds, and all kinds of game that are well worth visiting.

The gymnasium, at corner of Longworth and Vine streets, is a complete institution.

The Public Library and Reading Room, on Vine between Sixth and Seventh, and the Mercantile Library, on Walnut street between Fourth and Fifth, are worthy of a visit and will furnish delegates an opportunity to see the newspapers of their own locality.

The Highland House, with its incline plane railroad, affords one of the finest views of the beautiful river and its spans of bridges that it is possible to obtain.

The Cincinnati Hospital, on Twelfth and Central Avenue.

St. Mary's Hospital, on Betts and Linn.

The Good Samaritan Hospital, on Lock street.

The United States Marine Hospital, on East Third street.

The Children's Hospital, on Mount Auburn.

Longview Insane Asylum, at Carthage on C. H. & D. R. R.

The Ohio River Bridges and the Centennial Exposition Buildings.

SOCIETY PROCEEDINGS.

CINCINNATI ACADEMY OF MEDICINE.

Stated Meeting, January 30, 1888.

DR. GUSTAV ZINKE reported a case of

CÆSAREAN OPERATION, WITH A DESCRIPTION OF THE SÄNGER OPERATION.

(See p. 413.)

DR. C. D. PALMER said that, having been present at the autopsy, he could testify to the accuracy of the pelvic measurements as reported. The pelvis, if classified, might be called a *justo-minor*, except that the antero-posterior diameter of the brim was contracted out of all proportion to the remaining diameters. The contraction at the brim was about 2 inches for the conjugate, and 1 to 1¼ inches for the oblique diameters. In the treatment of pelvic deformities we have at our disposal five different, distinct methods of delivery, viz.: the induction of premature delivery, the forceps, version, craniotomy, or its improved modification, and Cæsarean section or some of its modifications. While these come in conflict in some cases, to a large extent each has a special field of application. Although the question of the induction of premature labor has no direct bearing on this case, at the same time it may be interesting to inquire whether this poor woman could have been delivered of a living child if the condition of her pelvis had been known early enough in pregnancy; or whether, if she had recovered and again become pregnant, could she be delivered *per vias naturales*? Premature labor is induced for the sake of both mother and child, from the 32d to the 36th

week of utero-gestation—the earlier the better for the mother, the later the better for the child, *ceteris paribus*. Delivery has been induced as early as the 7th lunar month with a living child, with a pelvis as small as 2½ inches conjugate. But when we recall that this pelvis was not only so small in the conjugate, but much contracted in all other diameters, it implies that delivery would have to be induced necessarily earlier than the 7th lunar month, and completed, it is not improbable, by the forceps or version, with some delay, and at a time when the child was very young and feeble, it seems merely possible that it could have been born alive, or if alive, for it to live on account of prematurity. It is safe to say that the induction of premature labor with a live child in this case was impracticable. If this woman had survived and become pregnant again, one of two things would have had to be done: the induction of an abortion very early in pregnancy or, better still, the allowing of the pregnancy to go on until term, and then, at a favorable time in labor, to perform abdominal uterine section.

This was no case for the forceps, for the range of this instrument is for pelves of from 4 to 3½ or 3¼ inches conjugate. He would not wish to condemn the practice of the gentlemen who used the forceps in this case, hoping thereby they might effect delivery. Under the circumstances, a non-acquaintance with the exact pelvic dimensions to be encountered, a lack of knowledge only to be supplied by the experience then obtained, almost any obstetrician would have applied the forceps at first, to test what they could do. Their application could do no harm, if their use was not unduly and forcibly persisted in. Nor was this a case for podalic version. The range of application of version is in pelves with conjugates from 3½ or 3¼ inches to 2¾ inches. Version is done with the expectation of delivering a live child, and offers in proper cases a most useful means to improve upon nature's mechanism in head cases, as well as the utilization of additional forces to aid the expulsion of the child. The conjugate diameter of the brim is more frequently and decidedly contracted in pelvic deformities than any other. Therefore, its measurement has served as the chief guide—the key to the lock of the pelvis. A conjugate ranging from 2¾ to 1¾ in. is the field of utility of craniotomy and Cæsarean section. The conjugate of the pelvis under discussion was 2½ inches, and within this range. Manifestly, then, one or the other of these two methods was to be considered. A live child at term could not have been delivered *per vias naturales*, and if the child was to be saved, Cæsarean section offered the only means. As a general rule, we say that if the child is dead, with these pelvic measurements craniotomy is the proper resort, and if alive, Cæsarean section. But no absolute or inflexible rule can be laid down. There are exceptions always. Craniotomy under certain circumstances may be best even although the child is alive, and Cæsarean section is to be preferred with a dead child if the pelvic contraction is very great. To a great extent, Cæsarean section is the operation of election, while craniotomy is the operation of

necessity. In all cases we are to look first to the mother. Her interests are not tantamount, but paramount. This principle in management, although old, stands to-day as strong as it ever did. While a mother is undoubtedly called upon to sacrifice somewhat of her chances for life that she may have a living child, she should not be asked to sacrifice her life. No woman in parturition should be advised to submit to an operative procedure which places her life in great jeopardy for her child's sake, if there is a more favorable way. Unless there is a reasonable prospect of saving her life as well as the infant's, the Cæsarean section should be ruled out. She has the right to decide.

Should craniotomy, then, be abolished? In a recent discussion of this subject, Dr. Meadows, one of the most eminent of Great Britain's obstetricians, exclaimed: "Where now is craniotomy?" In reply the speaker would remark that it still lives, and should live. Next, then, to the life of the child in determining between these two operations, is the question of the risks of each. With pelvic contractions not greater than $2\frac{1}{2}$ in., the risks of craniotomy are not greater—less than by Cæsarean section. If done early very few indeed need die. Death after craniotomy is largely due to delays and injuries from other manipulations. But the risks very rapidly increase when the contraction extends below $2\frac{1}{2}$ in. Near to 2 in. it exceeds those attending Cæsarean section. All things equal, as to the time of operation and conditions, it may be said that the risks of the two operations are about the same with a pelvic measurement of $2\frac{1}{2}$ in. Just at this point these two operations, *cæteris paribus*, must come into very severe competition. As the mother's interest is paramount, craniotomy is not to be laid aside unless Cæsarean section holds forth equally good chances for her life. The following is a condition in which craniotomy is justifiable although the child is living: A long, difficult labor, extending over many hours, it may be days; the liquor amnii has drained off, the uterine discharges are dark, offensive and unhealthy-looking; the fetal head is impacted within the pelvis, or it may be floating above the brim; the cervix is swollen, cedematous and bruised; the vagina swollen and livid, the uterus tetanic, or has ceased to act; the patient exhausted, with anxious facies, frequent pulse and feverish. This is no very uncommon picture. What conditions are these for uterine section? What chance has such a woman to recover after Cæsarean section? In what state is such an uterus to be cut, to contract, to be sewed, to heal? Craniotomy, unless the contraction is at or below $2\frac{1}{2}$ in., offers a far better chance for the mother.

Much of the opposition to craniotomy has arisen for two reasons: *First*, because it has been performed too frequently, and of course unjustifiably. But abuse is no argument for total abolition. *Second*, because of the very favorable reports attending Cæsarean section, especially in Germany. In the hands of Säger, Martin, Leopold, Crédé, and a very few others, the recovery has been nearly 80 per cent. If we contrast this high rate of recovery in Germany with the rates in the United States, it

speaks very unfavorably for us. Out of nearly 160 cases collected from this country by Harris the rate of recovery is only 37.5 per cent. These figures must not be taken on their face without an inquiry into the causes and circumstances attending each. In the first place, the operations in Germany are done by a few experienced and skilful men. Each has had much experience. Most of the operations have been done in hospitals with good surroundings. They have been done early in labor at most favorable times. The exact opposite is true, as a rule, in the United States. No better proof of the earliness of the operations done abroad can be offered than that, out of 33 cases, 31 children were born alive. If we collect the cases in which the operations were done early in the United States, we shall see that the rate of recovery is very good, viz.: about 70 per cent.

Säger has placed great stress upon his method of suturing. While the speaker would not wish to detract one iota of merit justly due this faithful and deserving worker, nevertheless it must be apparent to the careful investigator that his great success is not so much attributable to this, as to the earliness of the operations. The Säger operations in this country (5 cases) have all proved fatal, because they were done late. The Säger technique could not save them; they died in spite of the operation. They died in advance of the operation. The three great factors of success of Cæsarean section are: *first*, that it be done early, while the patient's general conditions are favorable; *second*, it must be done aseptically; *third*, the uterine wound must be most carefully sutured. The first factor is the most important of all. Now, this conflict between craniotomy and Cæsarean section will continue so long as the dangers of the latter exceed those of the former. When the technique of the Säger operation is perfected, when this technique is well understood, when the operations are done early, when pelvic deformities in this country are more thoroughly studied and appreciated, then will the section be more frequently made, its rate of success gradually increase, and in the same ratio will the necessity for craniotomy equally diminish. Then shall we be obliged to encounter a fewer number of those dreadful cases where at our first interview we are brought face to face with a parturient woman exhausted after several days' labor, a midwife and several practitioners in attendance, each having exhausted himself in fruitless efforts to deliver: with soft parts bruised, swollen and lacerated, and finally a craniotomy or a section with a forlorn hope. The abolition of craniotomy on living children is a consummation devoutly to be wished, but in the present state of affairs it is an advance not yet to be realized.

In Dr. Zinke's case, conditions were certainly not favorable for the section; still, it was probably to be preferred to craniotomy, because the child was living, and because the measurements of the pelvis were at that border line where the risks of the two operations did not widely differ. Of course it will now remain an open question whether the woman might not have recovered under craniotomy. Dr. Palmer did not

regard this as a proper case for the Porro operation. The uterus was in a fair condition for section, and it is always to be preferred except in those cases where the organ is greatly bruised, lacerated, gangrenous or septic. These complications may make the Porro-Müller operation not superior but necessary. Laparo-elytrotomy possesses certain advantages in the diminished risk of a loss of blood, and septic infection, but its technique is not so well understood, nor as easy of execution. The improved section is generally preferable. The improved Cesarean section is an outgrowth of many improvements in abdominal surgery, running through many years. Although the Sanger operation has nothing distinctly original due to Sanger, but embraces points understood and executed by Müller, Frank, Leopold, Kehrer and others, nevertheless Sanger has formulated all these improvements, shown their combined utility, and hence with perfect propriety the operation as now understood and now recognized as the best, ought to be called the Sanger operation.

In conclusion, Dr. Palmer said that Cesarean section had (to his knowledge) been performed but three times in Cincinnati; once by Dr. Walton, on a dwarf, done early; once by Dr. N. P. Dandridge, (laparo-elytrotomy) done late; and finally the one reported this evening by Dr. Zinke. All were fatal.

DR. W. H. WENNING said that the indications for the operation were accurately given by Dr. Palmer. The statistics of the Sanger method certainly show a great superiority over the old manner of operating, and the results are so brilliant that we may confidently hope to see Cesarean section exhibit its triumphs as well as other abdominal operations. We all remember that ovariectomy was at one time bitterly opposed by men high in authority, and whilst it was then often considered unjustifiable, the reverse is now true; it is unjustifiable *not* to operate if there be any hope of success. He could not help being struck, however, with the unfavorable record of this operation in the United States when compared with Germany. This could, however, readily be explained by the fact that the recent records of the Sanger operation are from men well-skilled in abdominal operations, being either professors or their trained assistants. Moreover, the patients were seen early, the deformity diagnosed early and the operation performed before futile attempts at delivery had been made. They were removed to the clinic and the operation performed *secundum artem*. The statistics in this country are based upon operations performed by a large number of men, some of whom perhaps never witnessed or performed a laparotomy before. The comparison could not be considered altogether fair; if the average was a general one for all Germany as for the United States, he doubted its being any better than our own. He then read the statistics of the first 50 Sanger operations as published by Credé in the *Archiv. für Gynäkologie*, vol. xxx, No. 1, in which the percentage of recovery was shown to be 72 per cent. for all and 88.2 per cent. for Germany alone, the United States contributing four cases with four deaths. He could, however, hardly account for the increasing mortality in this country as shown by

Dr. J. Taber Johnson, based upon the record of Dr. Harris. According to his statement of it of 144 operations, only 54 women (37½ per cent.) recovered; but while the first 50 showed 54 per cent. of recoveries, the last 50 showed a favorable result in but 24 per cent. These figures might be somewhat modified by the additional cases mentioned by the essayist. This record also shows the superiority of the Sanger method over the Porro operation. The first 50 Porro operations show 21 recoveries (42 per cent.), whilst the Sanger method shows 36 recoveries (72 per cent.), a difference of 30 per cent. in favor of the latter. He felt confident that Cesarean section would ere long supplant embryotomy of the living child.

DR. T. P. WHITE said it was the attendant's duty to advise the operation that afforded the best chance to both mother and child, but doubted if the mother would ever accept Cesarean section in preference to craniotomy, were the true facts presented to her. It is unfortunate for the reputation of Cincinnati that all three cases operated upon had terminated fatally. He was of the opinion that it was not the fault of the operators, but the result was largely due to the prevalent custom of employing midwives in the parturient stage, a physician not being called in until the woman was exhausted. In consequence of such delay the operation could be but a *dernier ressort*, and the prospect of recovery greatly diminished by reason of the unfavorable local and general conditions. In the case under consideration the gangrenous condition of the uterus at the autopsy clearly demonstrates its condition and no wonder the termination was in death. In such cases he prefers the Porro operation, as he thinks the prospects of recovery much better.

DR. GUSTAV ZINKE desired to refer to but a few points:

1st. That gangrenous peritonitis existed cannot be doubted if the character of the pus and pelvic peritoneum be at all considered. At the time of the operation however, the parts seemed to be in a perfectly healthy condition. The uterus contracted promptly and the placenta was expelled as from a healthy uterus.

2d. He did not believe that the criticism in reference to the advisability of Porro operation in cases like his own would hold good. True the removal of the uterus would act as a safeguard against future pregnancies. But what surgeon would amputate an arm or leg to prevent a possible future fracture. The aim of surgery is to save and restore if possible to perfection the injured or diseased parts. The Porro operation is justly limited, to the case described in the essay. The Sanger method will be adopted in preference to the Porro operation, wherever its technique is fully understood.

3d. Midwives are blamed for a good many mishaps unjustly. We must all confess that they are not what they should be. Whose fault is this? They have their sphere. In natural cases, a woman of ordinary intelligence, properly trained, can unquestionably undertake the management of a natural case of labor with propriety. She should also possess

knowledge of abnormal conditions and where they are present call for medical aid.

4th. He concedes that of late, especially in the hands of Lawson Tait, a laxative in the form of Epsom salts has in many instances dispelled the approach of peritonitis or cellulitis. He expressed the hope that, while Lawson Tait has taught the surgical world to open the abdominal cavity and remove the uterine appendages or other diseased structure with impunity, that the day is not far distant that will bring us a remedy to relieve reflex phenomena which apparently reside within the ovaries.

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Female Medical Aid to the Women of India—The Health of Manchester—Surgical Treatment of Empyema—Haya Poison, a New Anæsthetic—Pulsating Tumor of the Orbit, with Protopsis—Foreign Practitioners in Switzerland—Sir Morell Mackenzie—The British Nurses' Association.

The third annual report of the association for supplying female medical aid to the women of India, presented to the recent meeting under the Presidency of the Viceroy, abounds in signs of good omen for the future of this important movement. The scholarships founded by the high priest of the Temple at Baidquath have, it is true, not yet been utilized, as no Hindoo female medical students belonging to any of the high castes have been found willing to come forward and claim them. It is a significant fact, however, that a Hindoo lady of Calcutta has founded two prizes for female medical students in memory of her deceased husband, whose name they will bear. Elsewhere, according to the report, evidences are multiplying of the weakening of the prejudices which have so long condemned the native women of India to hopeless suffering. The great event of last year was the Jubilee collection. Donations of one lakh from the Maharaja of Jeypore, and of half a lakh from the Nizam and Maharaja of Ulwar, with many large subscriptions from others, have been received. By means of Jubilee collecting cards £1,890 were collected in England and nearly five lakhs in India. The income of the association is already estimated at 30,000 rupees per annum.

In spite of able and energetic municipal officers and a liberal expenditure of money on sanitary objects, Manchester, according to the address of Dr. Ransome to the local Statistical Society, is still the most unhealthy city in the Kingdom—its death-rate being 60 per cent. above the average of twenty-eight other towns. A somewhat better account is to be given of the twin borough of Salford, which is only 25 per cent. behind the same localities. Dr. Ransome expressed an opinion that during the last twenty years there has been some improvement in the physical condition of the work-people of Manchester; that the generation now growing up has, on the whole, been better fed and less severely worked

than the one preceding it, and that the result has been a distinct improvement in the appearance and in the health of both male and female workers. Dr. Ransome urged that accurate measurements should be made every ten years of representative groups of the population at certain ages, so that these could be compared, and stock taken of progress or otherwise.

Mr. Mansell Moullin, speaking recently of the surgical treatment of empyema, said everything pointed, except in children and tuberculous cases, which were expressly excluded, to operation as early as possible. He considered primary excision of a rib was hardly ever required, unless the empyema was localized, as India rubber tubes very soon wore the ribs away, so that there was little danger of their being nipped as the thorax collapsed. Based on an analysis of thirty-four cases, Mr. Moullin considered two tubes must always be inserted, even if they were only a few inches apart; they might be in the same intercostal space, but there must be two for effective drainage. The situation he generally chose was in the fifth or seventh interspace in the mid axillary line. Washing out the cavity was found to be quite unnecessary, if air was allowed to pass freely out and in there was no decomposition, the pus in amount diminished almost to nothing and the cavity rapidly closed in. In old cases the first thing was to establish free drainage by making a second opening. On five cases it had been necessary to trephine the ribs, as the chest wall had practically become a solid bony cuirass. In two cases some of the ribs had been resected, in one two inches of four had been removed, in order to allow the thorax to collapse, but the patient, who had other complications, sank from exhaustion ten days after. In the other, portions of two ribs were excised, as the sinus ran rather round the thorax following the direction of those ribs, than upwards as in the former case. This was attended with considerable benefit. In no case was any trouble experienced from the intercostal arteries. The direction in which the sinuses run must in each case determine where the ribs should be cut, how many should be removed and how much of each.

An English firm has produced another new anæsthetic, called Haya poison. The substance is of two kinds: the first amorphous, dark brown externally, brownish-green on fracture, compressible and powdered only with difficulty; the other almost black, translucent and brittle. Experiments having been made with a view to determining the presence of its anæsthetic properties, it was found that Haya poison produced in the cornea anæsthesia similar to that of cocaine, but lasting eight or ten hours. When hypodermically injected it produces in animals a slowing of the heart's action and paralysis of the extremities, with subsequently disturbance of the respiratory functions, dyspnoea, convulsions and salivation. At present it is thought that the anæsthetic properties of the new product are due to its containing minute quantities of erythrophlerine.

Mr. Adams Frost has had under his charge an interesting case of pulsating tumor of the orbit with proptosis. In answer to questions the man had again and again stated that the injury was caused by being

struck by a piece of wood as thick as his thigh and many pounds weight, that it struck him with considerable violence, and that the end was blunt and as large as a fist. This history made the case present difficulties as to the exact cause of the phenomena, they being as consistent with an intracranial as with an intraorbital lesion. Looking at the pathology of other cases, Mr. Adams Frost is disposed to take the view that a fracture has been produced passing across the carotid artery in the cavernous sinus.

Sore tribulation has arisen among the British invalids in the Engadine, on account of a decree being suddenly passed by the authorities forbidding any one not armed with a native diploma to practice medicine in Switzerland. The flocks of sufferers thus deprived of their regular medical attendants have appealed to our Minister at Berne. The decree certainly seems somewhat suicidal, for it is the foreign visitors who have made the fortune of these Swiss health resorts, and if the winter residents are driven to seek fresh fields and pastures new, the legislators responsible for the enactment will find that they have killed the goose that laid the golden eggs.

From Berlin it is reported that Sir Morell Mackenzie is looking very careworn and haggard, evidently feeling the heavy responsibility attached to him. He is stated to be continually receiving letters in which his life is threatened if he does not take his departure from the German capital. He is attended by two detectives when he walks by himself in the grounds attached to the palace.

The British Nurses' Association is going to establish a register for nurses, which shall be a guarantee to the public that those whose names are on it have received a sufficient amount of training to make them thoroughly efficient.

G. O. M.

MISCELLANEOUS.

THE INDEX MEDICUS.—The number of student physicians in any place can be fairly judged by the number of subscribers to the "Index Medicus." As a matter of curiosity we append the following list of paying subscribers in and out of the United States:

Memorandum Showing the Number of Paying Subscribers to the "Index Medicus."

United States.	Foreign.
California.....	3 Argentine Republic.....
Connecticut.....	3 Austria.....
District of Columbia.....	14 Belgium.....
Georgia.....	2 Canada.....
Illinois.....	5 Denmark.....
Indiana.....	1 England.....
Louisiana.....	2 France.....
Maine.....	3 Germany.....
Maryland.....	13 Holland.....
Massachusetts.....	34 Ireland.....
Michigan.....	7 Italy.....
Minnesota.....	2 Japan.....
Missouri.....	5 Peru.....
Nebraska.....	1 Russia.....
New Jersey.....	5 Scotland.....
New York.....	78 Switzerland.....
Ohio.....	6 Turkey.....
Pennsylvania.....	39
Rhode Island.....	7
South Carolina.....	2
Vermont.....	1
Virginia.....	2
Wisconsin.....	2
	123
	363

In addition to these, 100 copies are taken for distribution to the medical officers of the army at special rate, making 463 total.

In the home list it is curious to remark that New York has twice as many subscribers as Pennsylvania, and that in Massachusetts, Maryland, and the District of Columbia, a reading physician does not seem to be a very scarce animal. In the great State of Illinois, with the fermenting mass of commercial activity like Chicago, but eight doctors have had pride enough in their country's publication, interest enough in medical science, or a love of reading sufficient to warrant their spending ten dollars a year in sustaining the most illustrious medical publication in the United States, and nurturing their own souls and bodies by medical culture. Worse than this, a rich State like Kentucky, with cities as large as Louisville, does not even seem to require one copy of the publication.

The receipts from the "Index Medicus" to the publisher, are not nearly enough to cover the cost of so extensive a publication. Mr. Davis deserves the very warmest thanks of the profession, but how long he will continue to carry this burden, we do not know. It is most extraordinary that he does not in this matter receive better backing. The thanks of the profession are good, but the thanks which do not express themselves in bank-notes are only an exemplification of the old proverb, "Soft words butter no parsnips."—*Therapeutic Gazette.*

DAMAGES FOR DEFECTIVE HOUSE DRAINS.—A case of some hygienic and public importance came last week before Mr. Commissioner Kerr in the City of London Court. Two ladies sought to recover £25, damages sustained by them by reason of the defendant's misrepresentations as to the state of the drainage at the house occupied by them as tenants at a rental of £90 a year. It was stated for the plaintiffs that a distinct assurance was given either by the defendant or his agent that the drains were in perfect order; but soon after the plaintiffs entered into possession they discovered that the drains were defective. Some repairs were made, and then came a plague of rats, as many as twenty-two having been killed in a few number of days. When complaint of this was made to the agent, he philosophically replied that "they would go away in due course." It was also stated that as the result of the insanitary state of the house the plaintiffs' boarders became ill and left, and the plaintiffs had suffered loss to the extent of some claim. Mr. Commissioner Kerr recognized the claim, and gave judgment for the plaintiffs for £10, with costs on the higher scale.

THE CROONIAN LECTURES for this year, by Dr. Donald MacAlister, will be on "Antipyretics."

ARKANSAS STATE MEDICAL SOCIETY will meet at Fort Smith on April 25, 26, and 27.

NORTH CAROLINA STATE MEDICAL SOCIETY will meet at Fayetteville on May 8, 9, and 10.

A NATIONAL PHARMACOPEIA.—MR. S. J. RANDALL has introduced a bill into the House for appropriating \$5,000 for publishing a National Pharmacopeia, to be edited by two officers of the Marine Hospital Service, and two each from the medical staffs of the Army and Navy.

THE WESTERN PENNSYLVANIA MEDICAL COLLEGE, of Pittsburg, held its second annual commencement on March 24. The degree of M.D. was conferred on thirty-four graduates. In the evening a banquet was held.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MARCH 24, 1888, TO MARCH 30, 1888.

Major Wm. C. Spencer, Surgeon, died March 22, 1888, at Ft. Trumbull, Conn.

Major J. P. Kimball, Surgeon, granted leave of absence for two months, to take effect about April 10, 1888. S. O. 68, A. G. O., March 23, 1888.

First Lieut. W. D. Crosby, Asst. Surgeon, granted leave of absence for two weeks. S. O. 29, Dept. Ariz., March 16, 1888. Capt. Thomas F. Ayfull, Asst. Surgeon (retired), died March 12, 1888, at Ft. Lee, N. J.

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ORIGINAL ARTICLES.

ANTISEPTIC INHALATIONS IN PULMONARY DISEASES.

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In the treatment of pulmonary complaints the tendency at the present time is towards local medication. This arises principally from the general acceptance of the germ theory, which teaches in the main that diseases originate from microorganisms; and the belief that from this it must follow, as a necessity, that these microorganisms must be destroyed or rendered harmless to organized tissues, either as a means of cure or as a prophylaxis to such disease. It is from the supposition that those microorganisms known as bacilli exist in the lungs in tubercular disease, and that their destruction eventually becomes necessary in order to cure the pathological condition recognized as tuberculosis, that the study of antiseptic or germicidal inhalations have for the past few years received more than usual attention. The presence of the tubercular bacillus, made renowned by Koch, has been too frequently verified by competent observers to admit of a doubt as to its reality, nor can there be much less doubt as to the dependence of the phthisical process on the presence of the bacillus. This is now acknowledged by most pathologists and bacteriologists. At the same time it has been made apparent that the bacillus can be more readily destroyed in a culture fluid than in its habitation in the lungs. In the first place because it can be reached more easily, and in the second place because antiseptics of sufficient power to kill it out of the body would, if applied to it in the lungs, jeopardize the life of the subject on whom it is found.

For these reasons attention has been directed more particularly to the study of means whereby antiseptics or germicides may be made to reach it in the lungs more directly, certainly and safely than has hitherto been known. It is no part of the object of these remarks to discuss the pathology of tubercular consumption, about which so little is known, but it may be said the state in which we find the lungs in this disease is the same we find in other destructive changes in other parts of the economy, that is to say more or less putrefactive or septic according to the

amount or degree of suppuration, or the extent of the virus or poison infused. Pavy says, "It is only in the presence of the organisms in question that putrefactive decomposition occurs," and "we are bound by the evidence now before us to look upon putrefaction as the issue of the influence exerted by the living organisms to which our attention is being given." (Harveian Oration).

Antiseptic inhalations for the treatment of diseases of the lungs of course presupposes sepsis as their object and aim, and upon this ground is based the theory of antiseptic treatment. The object of antiseptics is to destroy or counteract the influence of this sepsis. Whether this sepsis is contained in the bacillus, acting as a direct poison, setting up a peculiar inflammatory process more or less purulent in character, which constitutes the whole of the disease, or in the products of this inflammatory action produced by this or other causes—these forming the media, the culture beds, or feeding grounds, as is the case with other microorganisms under allied conditions, no one is so far advanced in these investigations to decide. There can be no doubt that the tubercular bacillus lives and multiplies under septic conditions. All microorganisms thrive best and increase more rapidly during putrefactive changes. Bacteria it is said cannot live in healthy tissues, that healthy organisms are able to resist their formation and growth, while dead tissues have no such preventive power, that bacterial growths and the destruction they cause occur mostly in the areas of stasis, where the resisting effort is far below the normal, in localities where there are distinct tissue changes, or accumulations of a character requisite for their growth and increase, that these conditions are not presented when the natural forces and vigor of the constitution are up to a healthy standard, but only when there is actually lowered vitality either from inherited tendencies or from causes accidentally acquired.

The teachings of Koch are, virtually, that the bacillus is peculiar to the lungs, and peculiar to the lungs in certain conditions of them—as in tubercular disease. That it sets up *de novo* that peculiar inflammation, that the character of the products of such inflammation differs from the products of other inflammations, and the sepsis or poison is contained in the bacillus, which never occurs spontaneously but is always found in connection with this diseased condition.

It is not german to the subject whether some dis-

pute or reject this formula or not. A few have denied the *rationale* of the whole germ theory, regarding it as absurd or false. There are a few others who believe that microorganisms are the result of disease and not its cause, that each microorganism, bacterium, bacillus or coccus, is peculiar to the disease in which it is found, and the result of the disorganization in such disease, that they are only carriers of disease—ptomaines—which are germinated during decomposition of organic matter. There are still a few others who maintain that it is not the microorganisms themselves that are poisonous to man but the products to which they give rise, which is chemical in its character, and we are told we must now seek to discover under what conditions and from what substances various microorganisms elaborate poisonous substances and also to determine the composition of these products.

The subject is too extensive for ordinary discussion, and as the doubtful points are so much more numerous than the true and reliable ones, it is best to bide the time when it can be elaborated with more satisfaction. The fact is that so many questions have arisen since the first introduction of the recent doctrines of tuberculosis that it is absolutely confusing to one who has not given it his whole continuously undivided attention. Whatever may occur afterwards there is no doubt in phthisical disease the initiatory step in the pathological process is in the presence of the bacillus. The absorption of waste products may be the ulterior effect—this absorption poisoning and subduing the whole system under its influence, producing the rapid waste and destruction of the tissues of the body we see in the general emaciation of the subject.

Phillips, of Edinburgh, "On the Etiology of Phthisis," (read before the Section on General Medicine, International Medical Congress.—*Medical Times*, Oct. 1, 1887) asks, what then is the *modus operandi* of tubercular bacillus in leading towards death? Is it the (1) progressive asthenia, (2) loss of hæmatisis, (3) the lighting up of fresh inflammatory foci, (4) the absorption of waste products? Its fatal properties cannot I think be regarded as merely irritant or primitive. In all probability they are attributable to a power possessed by it of elaborating new products which are afterwards absorbed? Koch says we must find the microorganisms in the blood, lymph or tissues of the diseased man. We must isolate these microorganisms and cultivate them and carry on these pure cultures through successive generations to prove their identity. But in spite of all this if our antiseptic inhalations are to be of any avail we must come back to the initial stage when the bacillus first gets its lodgement and begins to work. This is the time when treatment would seem to be the more efficacious. When the virus is absorbed into the blood, lymph or tissues, by way of the lymphatics and blood-vessels, all treatment would by *a priori* reasoning appear to be useless. We cannot, must not wait for this period if we would arrest the phthisical process. That the active principle of the bacillus is a virulent poison seems to be proven by the experiments of Dr. Philip (op. cit.) with the extract of sputa obtained

from phthisical patients. Among other conclusions he says, "It appears probable that the lethal influence of the bacillus is due to the production of certain poisonous products. That such a product is separable from the carefully selected and prepared sputum. That the product is possessed of well-marked physiological properties, being eminently toxic to frogs, mice, and other animals. That the toxic properties of the product are, speaking generally, depressant, and more particularly on the heart. A large majority of the profession accept the doctrines promulgated by Koch, and it is upon a clear appreciation of the points enumerated by him that our therapeutics depend. If the tubercular bacillus is a septic poison capable of rapid and destructive propagation in certain conditions of the lungs the *rationale* of the antiseptic treatment must be accepted as a *sine qua non* and unequivocally.

In a lecture by Dr. I. Burney Yeo (*Brit. Med. Jour.*, July 1, 1882) on "Antiseptic Treatment of Pulmonary Consumption," he says, "If the expectoration of the matters discharged from the air passages of phthisical patients swarm with infective microorganisms as we are assured on the highest authority is the case, if the active invading area of the diseased portion of the lung be crowded with these same infective bacilli, what treatment can be more rational and more appropriate than that which aims at destroying the life and activity of these organisms? Indeed I might ask what treatment can be rational or appropriate which neglects to follow this indication? The only question that admits of argument in connection with the subject are these two: Are we satisfied that the presence of these infective organisms in phthisical lungs and their causal relationship with phthisis have been demonstrated? and second, Have we the means of treating this disease antiseptically—that is to say, do we possess in an appreciable form the agents which will destroy these microorganisms and avert the progress of the disease? If in phthisis, as seems most probable, we have to do primarily with a specific virus or infective organism, and secondly with an inflammatory process excited by it, our treatment must have a two-fold object—the destruction of the virulent agent, and the reduction of the accompanying inflammation, and in actual practice my own experience certainly shows that the best results follow the combination in treatment of these two ends." And "I know of no disease in which so many various indications arise during its progress. But if pulmonary phthisis be pulmonary tuberculosis, and if tuberculosis depend on the presence of infective organism in the tissues, a rational treatment of phthisis must include the administration of antiseptic agents, or the surrounding our patients with antiseptic conditions.

"The term antiseptic in fact presupposes the existence of some septic process as we now know to be caused by bacterial growths. It has long been thought possible by inhalations of creosote to limit decomposition in the expectoration, but now that the investigations of many observers have shown the constant presence of certain bacteria in phthisical diseases, the hope is that not only may antiseptic in-

halations control septic processes in dead secretions, but that they may be destructive of those microorganisms which are the root of tubercular diseases in living structures." (S. C. Smith, M.D., etc., *Brit. Med. Jour.*, Feb., 1884.)

Some practical questions arise here for consideration, the most important of which are, first, can we destroy these microorganisms in the lungs with safety to the patient? and secondly, can we reach them by methods in our possession after we have satisfied ourselves they can be destroyed?

In all investigations tending towards a solution of these problems failures seem to be due in a great measure to causes arising out of misapprehension of the nature of microorganisms—particularly as to their vitality or power of resisting destruction. It is made apparent to us that antiseptics do not act uniformly. For instance, we may kill the full-grown bacillus and yet they multiply notwithstanding. Antiseptics may destroy the parent but fail to kill the offspring. By boiling a cultivating fluid containing bacilli for hours leaves the germs, or spores, untouched, but if boiled successively at short intervals the young brood are destroyed as they appear, and their multiplying ceases (Tindall). Lex found some bacteria still moving rapidly at a temperature of 120° C. Tindall's experiments have shown that there are stages in the life of the bacteria during which they resist almost any degree of moist heat. Sander-son puts the death-point of common septic bacteria at about 110° C., or 230° F. "It has been proven," says Parkes, "that they can stand a short boiling, that they can be floated in air-bubbles through vitriol, that they can be washed with carbolic acid solution of any strength short of 5 per cent. without being killed or losing their power of multiplication. Is it likely we are capable of destroying organisms which are so retentive of their vitality? I think it is quite obvious that all evidence shows that it is impossible either to keep germs out of the body or by antiseptics to kill them."

In some experiments by Koch, in 1882, (*Practitioner*) as to the reliability of disinfectants (the spores of splenic fever were generally used) he found carbolic acid in a 5 per cent. solution only sufficient to arrest the development of spores after two days, while a 1 per cent. solution was sufficient to destroy in two minutes the bacilli themselves. A solution of 1 in 850 was sufficient to check the development of the latter. The fact was very noticeable that carbolic acid in oil or in alcoholic solutions is absolutely without effect on the bacilli and spores. The spores after 110 days, and 70 days, respectively, in a 5 per cent. solution of carbolic acid and oil, and in alcohol, were repeatedly found intact. Salicylic acid and thymol showed unsatisfactory results, and even sulphurous acid, under such favorable conditions as are not obtainable in ordinary practice, fails to destroy the whole of the minute organisms that may be present. Chloride of lime in a 5 per cent. solution was also incapable of weakening the power of the splenic-fever spores (Elliston).

There is sufficient evidence to prove that it would be exceedingly dangerous to attempt to destroy mi-

croorganisms in the lungs by the same means used for their destruction out of the body. The conditions are totally different, and unless we can change the surroundings of the organisms or possess an agent only noxious to them and entirely innocuous to the pulmonary tissue, it would be useless to try such a procedure so manifestly fraught with danger; and predicated, therefore, our knowledge upon what has already been ascertained, it would appear to be entirely unsafe with the means we now possess to destroy germs so deeply imbedded in such delicate tissues without other means, also, to protect the latter from serious injury, or the general system from its toxic result. Considering the tenacity with which microorganisms hold on to life—continue their life history—how they resist chemical actions of the most varied kind, it is no wonder that our efforts have been unsuccessful in curing diseases of which they are the integral part by ordinary antiseptic means.

But supposing we had this agent especially adapted, a safe and unfailing agent, one particularly destructive to the infective virus, and not injurious, but salutary rather to the lung tissue, do we possess the means to reach it in the terminal bronchi, air cells, or parenchyma of the pulmonary structure? From experiments and from the literature of the subject this also seems problematical.

During some remarks on pneumatic differentiation at the meeting of the American Climatological Association, held in Philadelphia, May 10-11, 1888, Dr. I. H. Platt, of Brooklyn, said he believed unfounded, two of the claims put forth by Dr. Williams and Mr. Ketchum in regard to the Cabinet, the second of which was that the spray or vapor used in conjunction with the differential process can be carried further into the air passages, or more thoroughly condensed upon them than a spray or vapor could be under normal conditions. They cannot, he said, be carried so far, for the reason that the residual air is increased and consequently the inspired air which carries the vapor or spray cannot penetrate so far. It is claimed, he said, that the vapors of medicinal substances is condensed in the lungs during the differential process by compression consequent upon the commencement of the respiratory act. This is impossible, he said, first because compression only acts to condense a saturated vapor, and the air passages cannot be saturated with the vapor of a medicinal substance; and secondly, because no greater compression is produced at the commencement of the expiration under the influence of differential pressure than under other circumstances (*THE JOURNAL*, May 22, 1886).

Dr. Nathan Hill Hassall (*Lancet*, May 5, 1883). "On the Comparative Inability of Antiseptic Inhalations as at present practiced in Phthisis and other Diseases of the Lungs," defined the scope of the subject of the inquiry, which was, more particularly, to test the efficiency, or otherwise, of antiseptic inhalations in the class of diseases referred to, as carried out by means of different forms of oral or oro-nasal inhalers. The substances experimented with were phenol, or carbolic acid, creosote, thymol, and iodine. It was shown that in the case of the three first named

substances more than four-fifths were still present in the sponge at the end of the inhalation, while it was proved that the iodine on coming in contact with the mucous membrane of the mouth and cheeks became rapidly converted into an iodide, in which condition its antiseptic properties were of course greatly impaired if not destroyed. He said, also, that the unrecovered portions might be at least accounted for without supposing they were inhaled, by loss in extraction from the sponges, by loss in condensation of moisture in the inhaler, or the skin of the chin or cheeks, and in the mucous membrane of the mouth and fauces of the person inhaling. He also remarked, that but little evidence has yet been adduced to prove that any of the substances employed do really make their way into the lungs in any appreciable amount and so reach the seat of the disease.

In an address by Dr. Hassall, "On Inhalation, more particularly Antiseptic Inhalations in Diseases of the Lungs," read in the Section of Medicine, British Medical Association, 1883 (*Brit. Med. Jour.*, November 3, 1883), he says: "It was with a view to obtain evidence on this point that my first endeavors were made. I continued the following arrangement in imitation, as near as I was able, of natural respiration." It consisted of a syringe of 200 inches' capacity, provided with a hollow piston with a valve attachment, a Wolff's bottle filled with water, or bulb tube filled with spirit, as the case might be, attached to the syringe; the bottle in turn was attached to the termination of the trachea of an unskinned sheep's head and neck. The nose and mouth were covered with a well-fitting *papier mâché* respirator furnished with the usual cribriform receiver and sponge. The syringe was intended to take the place of the lungs, and the Wolff's bottle to intercept any substances used which might pass from the respirator down the trachea, with a view to their subsequent determination. The syringe was capable of being worked at the rate of 250 times per hour.

The first experiment was with $\frac{1}{2}$ gram, equal to about $7\frac{1}{2}$ grs., of carbolic acid. After the rapid action of the syringe for an hour and a half the piston in the bottle was tested by Chandon's very accurate and delicate process, with the result of finding in it only 0.003 gram of carbolic acid; that is to say, a mere trace. In the case of eucalyptol the faintest possible odor, only recognized with difficulty, was perceptible in the alcohol through which the air was passed. With turpentine the spirit was found to possess a decided smell of the oil, though it was obvious that the quantity actually passed was but very minute. With iodine the alcohol did not become colored in the slightest degree, nor did it furnish any evidence whatever of the presence of iodine. These quotations might be multiplied to show how difficult it is to inject vapors of medicated fluids into the air passages, and this difficulty throws additional light on our inquiries in regard to our therapeutic failures. If these vapors do not pass into the pulmonary cavity—only, indeed, to the mouth and fauces—we are naturally led to inquire into the cause of the impediment, and the answer to this inquiry would possibly be that there is some vital resisting power which has

been doubtless overlooked. Physical forces are always met by physical forces, and the weaker yields to the stronger; let us see if some vital or physical forces are not the foundation for these impediments.

The atmosphere is composed, in round numbers, of 20 volumes of oxygen and 80 volumes of nitrogen, with a trace of ammoniacal gas, and 3 to 6 parts in 10,000 of its volume of carbonic acid. The height of the atmosphere is estimated at 30 to 40 miles, and its pressure equal to 10 lbs. to the square inch. The pressure upon the surface of a man of medium size is estimated to be 37,560 lbs., or more than 16 tons. This pressure is exerted equally in all directions, and the internal air has the same density as the external air, modified possibly only by the difference in temperature; but for all practical purposes they are alike.

The body being immersed in this vast volume of air, by the immense pressure exercised upon it, has all its open cavities filled as a compensation to the external pressure, and this equable pressure or condensation of the atmosphere renders respiration less difficult. Were it not so there would be constant interruptions to the respiratory act, impediments either to inspiration or expiration, and consequently failure of the lungs to carry out their specific functions. Rarefied air has the same proportionate pressure of condensed air, only the pressure being reduced, and the combined apparatus employed in respiration being relieved of its accustomed weight, carries on the respiratory act with more difficulty; the difficult or more rapid respiration in this case being from two causes: first, from lessened pressure; and second, from the rarefied air, which contains less oxygen in a given quantity, and therefore requires increased respiratory acts to insure sufficient for oxygenation. If we exhaust the air around the body of a person we exhaust the air also in the air passages in proportion, because there must be equalization of pressure in both directions. The fluids then flow towards the surface, following the capillaries of the skin and integument and also the mucous membrane of the air passages.

In the respiratory act at or about the ordinary sea level we have the following kinds and quantities of air, viz.: 1, residual air; 2, reserve air; 3, tidal or ordinary breathing air; 4, complementary air. In a healthy male of medium stature the residual air which cannot be expelled from the lungs amounts to about 100 cubic inches; the reserve air, which can be expelled but which is not changed in ordinary respiration, amounts to about 100 cubic inches; the tidal air which is changed in ordinary respiration amounts to about 20 cubic inches. The complementary air which may be taken into the lungs after the completion of an ordinary act of respiration, amounts to about 110 cubic inches. Inspiration, breathing in, consists of the ordinary atmosphere; expiration, breathing out, of the expelling carbonic acid, watery vapor, a small quantity of ammonia and organic matter and a little nitrogen. Under ordinary conditions the air is the only principle absorbed by the lungs (Flint). Gases mix by the general law of diffusion without chemical action, and the force of diffusion is inversely as the square root of the density of gases (Ganot).

Can we see in all this the cause or causes of the impediment in reaching the lungs by vaporized medicaments by the ordinary means used for such purpose? Do we see a factor in atmospheric pressure which resists forces to unbalance its fundamental law of equilibrium, in the physiological act of respiration itself, which is dependent upon this law, or in the general law of diffusion of gases, which are always regulated by fixed principle?

In ordinary respiration we see that the residual air amounts to 100 cubic inches, the reserve air to 100 cubic inches, and the tidal air only to 20 cubic inches—that is, only one-eleventh of the air in the lungs is changed at each respiratory act, about eighteen times in a minute. This seems to be necessary in order to relieve the internal pressure as gradually and little as possible. The largest part of the air, therefore, remains in the lungs, the quantity expired being soon replaced by fresh air. How is it possible then to replace this air, except by the complementary air which, by distending the chest to its full capacity by an additional 110 cubic inches, would, if long continued, embarrass respiration and cause muscular fatigue or capillary plethora. This difficulty of replacing the air contained in the lungs would seem to be a barrier to the introduction of other vapors, unless it could be so mingled as not to interfere with its due proportion or properties.

Gases are bodies whose molecules are in a constant state of repulsion, and are continually tending to occupy a greater space. Fluids, as we have said, mix by the general law of diffusion, whose force is inversely as the square root of their densities (Ganot). This law is applicable to the gases contained in the lungs. The denser the gas, by this law, the less is its power of diffusion, and the lighter the gas the greater its power of diffusion. It would therefore be necessary, in introducing vaporous substances into the lungs, to be governed by the law of diffusion of gases, which has been heretofore perhaps one of the difficulties to their introduction. Another thing to be considered is that gases are more miscible than vaporized fluids, and this must be taken into account in the calculation of the admissibility of either into the air passages. In all cases gases are preferable to vaporized fluids, and will be found nearer to the natural process, and more fitted for mingling with the air of and absorption from the pulmonary cavity.

Absorption from the respiratory surface is, of course, undoubted. Flint says: "It is now almost universally conceded that animal and vegetable emanations may be taken into the blood by the lungs and produce well-marked pathological conditions. Among the most striking proofs of the absorption of vapors by the lungs are the effects of the inhalation of ether. This passes into the blood and manifests its characteristic anesthetic influence almost immediately." Experimenters on this subject have shown the facility with which liquids may be absorbed from the lungs and the air passages, but it must be remembered that the natural conditions are never such as to admit of this action. The normal function of the lungs is to absorb oxygen and sometimes a little nitrogen from the air; and the absorption of anything

else by these surfaces is unnatural and generally deleterious."

The normal condition of the respiratory surface is moist. It is continually bathed in watery vapor, making it always in a state of supersaturation and capable of resisting further moisture. This also must be reckoned among the difficulties of penetration. The density and pressure of the atmosphere, the kinds and quantities of air in the lungs, the influence of the residual air, the reserve air and the tidal air, as also the complementary air, the law of diffusion of gases, and the degree of moisture and absorption of the respiratory surfaces, must consequently be taken into account in calculating the chances of successful pulmonary therapeutics. And therefore, some modifications will have to be made in the means employed—in the apparatus and in the medicinal substances employed—so as to adapt them to their state, and condition of vital action.

So far as the mechanical means are concerned, there does not appear to be much difference between the results of the simplest and the most complicated contrivances. The simple oro-nasal respirator has been just as successful as the close chamber of the pneumatic cabinet. Both act on the same principle, the breathing of vaporized substances, with the addition of pneumatic differentiation in the latter, which is not yet proven to be of any especial service. Its action is yet debatable, and equally trustworthy investigators take different or opposite sides in regard to its utility. There are very grave doubts whether, by exhausting the air about the patient, it exsanguinates the mucous surfaces. It would be rather probable that it produces a state of congestion; or, on the other hand, by compressing the air, it can do so, as fluids are virtually incompressible. But the most important part of the discussion is whether it can produce differentiation at all—whether it can make the air surrounding the patient and that in his lungs, the external and internal air, to differ in density. Rarefied air is the same whether in a cabinet or in high altitudes, and its breathing qualities are governed by the amount of oxygen it contains. And as rarefied air seeks a larger space, the pressure is so reduced that the fluids flow in to fill the space and make compensation for that lost, and would produce congestion if long continued.

Dr. Hosmer A. Johnson, of Chicago, in a paper read before the Association of American Physicians, June 2, 1887 (*THE JOURNAL*), said: "The pneumatic cabinet I consider cumbersome and expensive, with nothing especially to commend it in the treatment of pulmonary diseases." This is the general opinion.

For the purpose of diffusing antiseptic vapors through the atmosphere the patient breathes. Dr. Burney Yeo (*op. cit.*) says he has found none answer better than the simple perforated zinc respirator which he has contrived, which, he says, practically costs nothing and which, with a little instruction, a nurse can make in a few minutes; in which, he says, you have the decided gain of being able to apply the antiseptic inhalation almost continually and of almost any degree of strength. It is made by taking

a piece of perforated zinc 4×6 inches, cutting with a pair of strong shears one side round and the other in four flaps, bending it half oval so as to fit the nose and mouth, bending in the flaps so as to form a cage for the sponge for the antiseptic fluid.

It appears to me, says Dr. Hassall, before cited, that the most effectual and natural method which can be adopted for inhalation is by chambers, the air of which is charged with the antiseptic or other medicament which it is desirable to employ. He says the following are the conditions and principles of the construction of a true inhalation chamber: 1, the dimensions should be moderate and in some cases even small; 2, the fireplaces and all inlets and outlets closed; 3, the temperature of the room should be kept at about 10° C. (66° F.); 4, the air of the room should be somewhat humid. In regard to the means whereby the air of the chamber is to be charged with suitable medicaments it occurred to him that, if any substance possessing even a very feeble volatility at ordinary temperature were dissolved and spread over a very large surface, the amount of the substance which would become volatilized would be in proportion to the quantity taken, the extent of the surface exposed, the temperature of the chamber and the amount of moisture therein contained.

To test this point 50 grams of carbolic acid (771 grs.) were dissolved in water, two Turkish towels being saturated with the solution and exposed to the air of the room at a temperature of 22° C. (72° F.), the room also containing rather much aqueous vapor. At the end of two hours a portion of the air of the room was, by means of a large syringe, drawn through a solution of alcohol, a few drops of which, on evaporation, gave with bromine water decided evidences of the presence of carbolic acid; 13 cubic centimetres of the vapor or moisture which had settled on the windows (equal to 200 grs.) were collected and were found to contain 0.029 gram of the acid, equal to 0.447, or nearly $\frac{1}{2}$ gr. After the lapse of forty-eight hours the towels were quite dry, and he was surprised to find they did not possess the slightest smell or taste of carbolic acid. One of the towels was then tested and found to contain only 0.07 gram, equal to 1.08 gr.—the whole of the acid, 771 grs., with the exception of the small quantity referred to, had disappeared. In the experiment with creasote 1.25 gram, equal to 19 grs., were taken—in one case creasote was placed on the towel without any addition, in another water was used; in a third the creasote was dissolved in alcohol. After four hours the cloths were examined. From that with the creasote only 0.91 gram was removed, from that with the creasote and water 0.41 gram, and from that with the alcohol 0.39 gram, amounts which correspond with 14.01, 4.31 and 6.01 grs. respectively. Experiments with thymol gave also analogous results.

The pneumatic cabinet, an apparatus of American origin, invented by Mr. Ketchum and first introduced by Dr. Williams, of New York, for treating diseases of the lungs by pneumatic differentiation, has been before the profession four or five years. Pneumatic differentiation, Dr. Platt says, is the process by which

the air surrounding the body and that entering the lungs is rendered of different densities. There are three forms, he says, which for convenience may be described as positive, negative and alternative. The effect of residual air-pressure upon the periphery of the body is to increase the expansion of the thorax in inspiration, consequently to increase the amount of residual air. By the increased pressure in the lungs it will tend to exsanguinate them and to raise the arterial blood-pressure in the general circulation. He believes that such benefit as results from the use of the cabinet is due mainly to the reduction of congestion in the lungs by the air pressure within them, and by the increased expansion and movement of the lungs favoring their greater activity and modifying their nutrition (THE JOURNAL, May, 1886).

Some of these points made so positively are probably open to discussion. He himself combats, as before quoted, the claims put forth by Dr. Williams and Mr. Ketchum: first, that the effect of removing a slight pressure from the periphery of the body was radically different from that of increasing the pressure of the air entering the lungs; and second, that the spray or vapor used in connection with the differential process can be carried into the air passages or more thoroughly condensed upon them than a spray or vapor could be under normal conditions.

From the large amount of literature on the subject of the cabinet it cannot be said to have increased to a very material extent our facilities in treating diseases of the lungs, over even the condensed air apparatus, the ordinary hand bulb or steam nebulizer, or the common nasal or oro-nasal respirator. They all have the same object in view, but none of them, so far, have achieved the success we have been looking for, or that success which is the chief object of antiseptic inhalations.

Another mode of reaching the lungs is the method introduced by Dr. Bergeon, of Lyons, by gaseous enemata. This method, known before on the Continent, was first introduced to the profession of England and America through a communication to the *British Medical Journal* (December 18, 1886), by Dr. J. Hughes Bennett, who said Dr. Bergeon came to see him at Evian les Bains, Lake Geneva, in order to bring under his notice his new treatment of phthisis and other pulmonary diseases. He says: "When Dr. Bergeon first told me that he had discovered a new mode of treatment by which pulmonary phthisis and other pulmonary diseases, asthma, chronic bronchitis, etc., could be cured and nearly always alleviated and retarded in their evolution, I smiled internally. I have so often heard of and tried new remedies only to fall back on the old, that I was incredulous. His explanation of his treatment, however, at once dispelled this frame of mind, leaving me with the impression that he had hit upon something absolutely new and of serious import. Indeed, I felt bound to admit that he had opened out a new field in pulmonary therapeutics, and that his views deserve and must imperatively obtain serious consideration and trial."

The method of Dr. Bergeon is too well known to require its description here. It was, in brief, as ex-

plained by Dr. Bennett, to pass carbonic acid, an innocuous medium, through sulphuretted hydrogen, a powerful microbicide, obtained from the water of the Eau Bonnes of the Pyrenees, and slowly inject this into the intestines, twenty minutes being prescribed for the slow, gradual injection of 4 litres or quarts. This is well borne by the intestines, is absorbed by the intestinal venous system and rapidly exhaled by the mouth through the lungs. In two or three minutes, on applying the nose to the patient's mouth, the air emitted was found to be tainted by the sulphurous gas. Within half an hour after ceasing the injection all the gas was absorbed and expelled through the lungs and mouth, the abdomen regaining its usual shape and softness. This, Dr. Bennett said, he had repeatedly witnessed.

Dr. Bennett says Dr. Bergeon claims marvelous therapeutic effects for this medication. In more than 200 cases, although the experiments were made at Lyons, where the climate is bad, the results have been successful to a degree that has surprised and astonished him. But what is the verdict after sufficient time has elapsed to give it extensive trial—earnest, intelligent trial by the best observers in all countries? Let us examine the record even partially; from it we glean the following: In 60 cases treated (Dr. Shakespeare examining the sputa) there was no apparent reduction in number or character of the bacilli. The good effects in my hands have been reduction of temperature, reduction of expectoration, very often a complete suppression of bronchial catarrh, and relief of cough. Should the bacillus of tuberculosis be the real cause, we lack thus far a specific therapeutic remedy, and from my records it does not appear that Bergeon's method will help us much with this indication for treatment (Bruen). In about 50 per cent. the condition has been greatly ameliorated, in 25 per cent. there was slight amelioration, and in 25 per cent. there was slight amelioration. In no case was there no result (Cohen). Produced collapse in varying degrees, weak pulse, vomiting, headache. It produced no good effect. 1. Toxic symptoms may follow its use; 2, causes great abdominal discomfort; 3, is in no sense a specific (Shattuck and Jackson). Our conclusions are, that the treatment of phthisis by gaseous enemata has had undue value attributed to it, that it is seldom of any benefit, but that it may prove serviceable in occasional cases (Pepper). Sudden glycosuria may arise under gaseous enemata (F. Billings). The effects on the urine are that the sulphates are largely increased, and sulph. hydrogen was frequently detected in the urine in a free state; much oftener than in the mouth. The tonic action of the gas causes increased secretion from the gastro-intestinal canal and skin and is laxative, finally impairing the red blood globules, causing great anemia, vomiting, debility, and a feeble condition (Hutchinson and Adams). The patients treated with air did as well as those treated with sulphuretted hydrogen (Forchheimer). Sulphuretted hydrogen is toxic to dogs. Is harmless only when injected in small quantities (Byron). Bergeon finds that the sputum in tubercular cases still contains bacilli when it is reduced to

a mere mucus, which shows the gas is not inimical to this form of organism (Bruen). The perusal of the discussion at the meeting of the Association of American Physicians on the Bergeon method of treating phthisis by enemata of sulphuretted hydrogen and carbonic acid, described by Dr. Henry Bennett in THE JOURNAL last December, does not leave a very favorable impression on the mind. Between 50 and 60 cases altogether were mentioned, but in no one do we gather that the improvement was very marked; in a very considerable proportion the treatment had to be abandoned owing to the occurrence of colic, diarrhoea, vomiting and collapse (*British Medical Journal*, October 17, 1887). And so quotations might be multiplied indefinitely going to show we have not yet obtained the *desideratum* in pulmonary therapeutics, and the way is still open for further investigation.

The choice of the microbicide or antiseptic is of some importance. There are at present a sufficient number for all ordinary purposes, each having its favorites and its proper claim of usefulness. The favorites are bichloride of mercury, iodine, bromine, iodoform, turpentine and carbolic acid.

Dr. Renzi, of Naples, has employed inhalations of four kinds: 1. Iodoform and essence of turpentine—20 drops of a liquid containing 1 part of iodoform and 20 parts of spirits of turpentine; 14 patients were submitted to the treatment. 2. Iodine volatilized every day in a bedroom 30 cubic metres in capacity, in the amount of 0.40 to 2.10 grams, heated in a capsule by means of a sand bath; 3 operations were made. 3. Sulphuretted hydrogen evolved by the action of sulphuric acid on powdered sulphide of iron, in such proportion that every cubic metre of atmosphere in the chamber should contain 75 cubic centimetres; 7 cases were treated. 4. Sulphurous acid made by burning sulphur in a closed chamber, so that there should be 43 cubic centimetres of the gas in a cubic metre of the chamber. Of all the inhalations Dr. Renzi decides in favor of turpentine and sulphuretted hydrogen (*Lancet*, July 25, 1885; *Med. News*).

Prof. Arnaldo Cantani, of Naples, in view of the fact that other bacteria are destructive of Koch's bacillus, has recently made some experiments relative to the therapeutic treatment of tuberculosis by means of the bacterium termo. He first found by experiment that the bacterium termo, whether inoculated, inhaled or injected, exercises no baneful influence upon the tissues of living animals. He then caused a spray of fluid containing the bacterium to be inhaled by a patient suffering from tubercular disease of one lung, whose sputa contained tubercle bacilli in large quantities as shown by the microscope, and also by the results of injections practiced upon small animals. These inhalations, continued daily for a month, were followed by the rapid improvement of the patient, especially in the conditions. The sputa, examined at frequent intervals, were found to become less and less rich in the bacillus tuberculosis, but were full of bacterium termo, and their injection into the lower animals failed to produce tuberculosis (*Med. News*, August 29, 1885). On the contrary, however,

Dr. Ballazi has carefully followed the bacterio-therapy details advised by Cantani in 8 cases of advanced phthisis with moderate fever. During the inhalations the sputa were daily examined for bacilli and bacterium termo, with the following results: 1. In none of the 8 patients was a diminution of the bacilli demonstrated. 2. Fever, cough, and other symptoms were as troublesome during the four or five weeks during which the inhalations were given as before. 3. No arrest or regression of the phthisical process was at any time demonstrable by physical examination. 4. In one case diarrhoea occurred, which ceased only upon stopping the inhalations. 5. After ten to fourteen days the patients objected to the inhalations, and only 4 held out beyond four or five weeks. The nauseating smell and taste of the (freshly prepared) solution of bacterium termo decreased the appetite, and the strength of the patient also decreased (*Med. News*, July 10, 1886).

At a recent meeting of the Odessa Medical Society Dr. Filipovitch, of the Odessa Fever Hospital, made a very instructive communication on six cases of advanced pulmonary phthisis which had been treated by him after the bacterio-therapy method recommended by Prof. Amaldo Coutani. He obtained pure cultures and aromatized the mixture with one or two drops of peppermint and the patient made to inhale by means of Richardson's spray-producer. The inhalations were repeated twice daily. In one of the patients the experiment was given up at the end of a week since the man's state commenced to grow worse from the very beginning, and fever, steadily increasing bronchitis, and hemoptysis, had developed. Three other patients died under treatment; one in fifteen days and another after seven days, and the third after twenty-five days. The remaining two patients left the hospital after treatment for seventeen and fifteen days, respectively. Dr. Filipovitch came to the general conclusion that "no good whatever may be expected from the treatment of tuberculosis by the inhalation of the bacterium termo" (*British Medical Journal*, Oct. 2, 1886). The conclusions at which we may arrive in analyzing these remarks are: 1. That we have not yet discovered the ways or means to destroy microorganisms in the lungs in phthisical diseases. 2. That our studies probably have not been in accordance with the teachings of physical or vital laws in order to fulfil this indication. 3. That our failures in inhalation therapeutics may be due to misapprehension of the relationship of microorganisms to disease. 4. That it would be strange that if in the end we should discover that microorganisms are not carriers of disease, but only the result of putrefaction, whether we find them in the dead carcass on the plains or in the lungs of the refined in luxurious habitations. 5. That the object of our treatment should be rather to preserve structures in health than seek to destroy organisms which are not amenable to treatment.

THE EARLY RECOGNITION OF EXOPHTHALMIC GOITRE (GRAVES' DISEASE).

Read before the Philadelphia County Medical Society, March 14, 1888.

BY J. MADISON TAYLOR, M.D.,
OF PHILADELPHIA.

In the paper which I have the honor to read to you to-night, I shall not attempt to do more than call your attention to the importance of early recognizing a disorder which often eludes one, to point out certain features which should enable us to do so, and to offer an illustration, very briefly, the salient points in half a score of cases.

Exophthalmic goitre, or Graves' disease, is not a rare malady. At first it is merely a disorder, but frequently becomes a serious disease, and is known to cause death. More often it unfits its victim for active usefulness, or, at least, limits this and sadly disfigures him.

Like certain other ailments the outcome of irregular nervous discharge, what in its incipency is a very manageable complaint, produces in time a disastrous effect upon the tissues, and forms a practically unconquerable disease.

Dr. Jonathan Hutchinson says:

"Graves' disease appears to me to be of the utmost importance, not only on its own account, but as what we might call a type malady. It is the most definite and striking example of which we know, of a severe and protracted malady which, despite its severity and persistence, yet has a natural tendency to recovery."

In reviewing a large number of cases in the search for a complete symptomatic picture, I find that the most constant early feature is sudden and marked evidence of loss of nervous equilibrium. The vasomotor nerves seem quite unstrung. Hence arise flushing, sweating, and other skin changes, diarrhoea and transient albuminuria. If at this time a careful watch be kept, I think we should find irregularities in the action of the pupil.

The skin usually loses its healthy hue, grows sallow or dark, and becomes greasy to sight and touch. This oily look was present in most of the cases I have seen, though I have not seen it mentioned elsewhere. Begbie recounts one case of pigmentation, or bronzing of the skin; Reynaud calls attention to vitiligo; and Edward Squire, to a discoloration in an isolated instance. The oleaginous appearance seems to me quite constant on face and body. This grows less when salt sponging and belladonna form part of the treatment.

Gowers calls attention to muscular tremor. I have seen this rarely. In cases 3 and 5 there is a tremulousness in the voice, which I ascribe to nervousness; yet it is constant.

The emotions become often so overwrought that various mental peculiarities excite apprehension. Or a wiser person may regard the case as one of pronounced hysteria; and, indeed, all through the malady hysteria remains present, more or less, leaving one not seldom in grave doubt.

Frequently delusions occur, and these so closely

MEDICAL PRACTICE ACT IN MARYLAND.—The Maryland Legislature has just passed a Practice Act similar to that of Illinois.

in unison with the ordinary habits and thoughts of the individual as to render them most difficult of detection (see Case 6).

Dr. Hilton Fagge warns us to be on the lookout for "slight cases in which one or two of the cardinal symptoms may be absent throughout." Trousseau also insisted on this point.

Von Graefe expresses the opinion that among women it is not rare to find instances of this malady where the only symptoms are disordered action of the heart, not accompanied by valvular trouble or hypertrophy, nor the faulty action of the lid as described by him.

Heart disturbance most often leads the sufferer first to seek medical advice. The pulse is always quick and irritable, usually intermittent. The heart-beats, as a rule, bear surprising relationships to the pulse. Overaction of the heart is well known to be a frequent feature of anemia and chlorosis. Begbie thinks it a powerful factor in causing Graves' disease. Ross regards the anemia which is usually present as rather a result.

Throughout the whole vascular system there is a manifest lack of *tone*. So constant is this that it may yet be found competent to explain the causation of the disorder. Certainly the graver features bear causal relation to this state. The vaso-motor nerves seem all out of balance; nor can it be confined to one part, though the cervical sympathetic is most prominently involved. There are cases where limited areas not governed by the upper ganglia show derangement, as in a woman now under the care of my friend, Dr. E. T. Bruen, where one side sweats from shoulder to toe, and the opposite eye is prominent. Arterial tension varies rapidly, and unaccountably; hence, the oft complained of noises in the head, amounting at times to terrific roarings (as in Case 5). This may explain the maniacal attacks, as well as blood-spitting, thirst, and transient albuminuria.

The heart itself is rarely diseased. The overaction in time brings on hypertrophy; more commonly, dilatation. It also suffers from the general malnutrition which is noticeable throughout the circulatory system. The small amount of structural damage which this viscus sustains is a matter for remark, however, when the profound functional disturbance is considered. Systolic bruits are commonly heard, even over the auricles and the great vessels of the neck. Dyspnea is distressing. This at times, even early in the history, alarms one who feels naught else to complain of.

The thyroid enlargement is liable to appear long before the eyes become prominent, but readily escapes attention. It may happen that a sense of constriction is felt when swallowing, especially in men who wear tightly fitting collars. Both lobes are, as a rule, enlarged; but if one only, it is generally the right. When recovery takes place, this badge remains to chronicle the victory.

The eye prominence is late to appear, as a rule, and it would seem to mark the height of the disorder. Before the exophthalmos, there may generally be noted the sign asserted by von Graefe to be

pathognomonic, a belated action of the lid in following a downward movement of the ball. Sometimes the lower lid is tardy in following an up glance. This obtrusion of the eye-ball is the most picturesque feature, but happily it is not constant, and is often very late. It is of both eyes, mostly, but if of one only, again the right suffers. Sight is seldom affected, except where the outstanding, unprotected cornea suffers hurt or irritation; then opacities may result. If errors of accommodation exist, this correction, in my opinion, greatly aids in reducing the exophthalmos. Fundus lesions are not characteristic; though pulsation of retinal vessels may serve to confirm suspicions.

Knee-jerks are rarely abnormal; often in slight excess.

Electrical examination has been, very recently, shown by Charcot, and confirmed by Vigoroux and Norris Wolfenden, to aid greatly in fortelling the onset of this trouble, the bodily resistance being greatly lessened most peculiarly in this disease. This may prove a valuable aid in diagnosis.

Case 1 illustrates extremely well the more distinctive features other than exophthalmos, which is not present—especially the marked vaso motor disturbance.

Jennie H., aged 23 years, single; no neurotic history, intelligent, hopeful temperament; somewhat emotional and talkative. Vague history of a fall at 2½ years, followed by a convulsion, and, from time to time, "fits" are described, but not clearly. At first they seem to have been epileptiform, but later resemble emotional overflow. At 14 years had typhoid fever, and for twelve months was "weakly." Some swelling of the limbs noticed—then came a period of good health. At 17 years menstruated first, but not regularly for a year or more. At 19 years began to work in a shoe factory, in a very exposed room, excessively cold in winter; frequently sat in wet shoes all day long. At 20 years, after a very painful day from cold, walked home in slush, profoundly exhausted: soaked her feet in hot water and went to bed. Then followed a nervous chill with throbbing pain at heart—it beat rapidly; an overwhelming sense of suffocation arose. From that moment the heart has been disordered. Then followed a series of medical pilgrimages to different dispensaries, with small benefit.

I think many of her symptoms were, even then, hysterical, masking effectually her real trouble. She had hæmoptysis, cough, great emaciation, and was treated for phthisis. The fits brought her under treatment for epilepsy. So far as I can learn, no one noticed anything amiss with the eyes or neck. I think there has been at no time exophthalmos, but a peculiar fluctuation in the condition of the pupils, which I infer is not recent. The dyspnea grew worse steadily, till it became impossible to lie in bed; and for six or eight months she slept fitfully propped up in a chair. In May last a profuse blood-spitting prostrated her for four weeks; soon after the urine was suppressed for three days, with no pain—then a very dark, thick, offensive fluid passed. During the past summer was very weak and thin, but attempted

repeatedly to work. Over-exertion at the wash-tube bowled her over again; several hemorrhages followed, and on October 1, she applied to me at the Howard Hospital.

I found a very pale, thin woman, suffering great dyspnoea; respiration 24; pulse fairly regular, 130 to 135; coughing incessantly; carotids throbbing wildly; pupils widely dilated; von Graefe's sign absent. There was complete mydriasis, as we found later, but no fundus lesion. The heart was laboring, loud musical murmur over base; apex beat downward and outward; "bruit de diable" in vessels of neck; thyroid gland enlarged, especially to right side, conveying thrill to hand; neck fourteen and three-quarters inches; skin pale and oily looking, readily sweated, and became chilly; legs oedematous; menstruation had been absent for three years; bowels always loose; urine, small amount, bright red with blood; sp. gr. 1.009; no casts; knee-jerks excessive in both legs; station bad from weakness.

Treatment.—The treatment consisted of carefully regulated feeding and rest; to drink plentifully of flaxseed tea; iron, in form of Basham's mixture, and digitalis, and hot hip-baths; belladonna plasters to the over-excited heart; later, cod oil and bromides, with digitalis. In a week the pupils became responsive to light; cough greatly moderated; the urine only smoky; heart sounds more defined.

To be brief, in two months the cough ceased; she could lie comfortably in bed; ate well and slept well; pupils became normal; had two or three "spells"—a little scolding aided these. In six months the girl pronounced herself cured, but she is readily upset by trivialities; twice the pupils have widely dilated on catching a slight cold, and once recently the urine showed traces of albumen. The menstruation was established twice, and slight showing at other times. She can now work at house chores with small fatigue. Pulse about 85 to 95, standing.

Case 2.—Mrs. H., aged about 28, no neurotic history, two living children, came under my care in 1881 during a miscarriage with adherent placenta. A similar disaster had occurred also some months before. My attention was drawn to a most disfiguring degree of exophthalmos. This had been observed within a few months by a well-known physician, who also warned her that she could scarcely hope again to bear a living child—probably on account of the disorder thus indicated. There was then menstrual derangement and great dyspnoea. Digitalis and ergot were ordered, also care to avoid exertion, but no clearly defined schedule of living. This I supplied and rigidly enforced—insisting upon systematic feeding and rest. I also found an irritable pulse and temper, muffled heart sounds, etc., but very slight right thyroid enlargement, a markedly livid oily skin, sweating surface, loose bowels, and occasional albuminuria.

Under treatment consisting, as stated, of regulated living, digitalis, ergot, along with iron and other tonics, she steadily improved, till in seven or eight months there remained only dusky skin and the eye and lid symptoms. These last I felt sure

would improve under use of glasses rightly adjusted—she having a high degree of myopia. After some persuasion this was accomplished with most admirable results, for the exophthalmos materially lessened thereafter.

I may say, as a matter of interest, that I have since delivered this lady of three healthy children at term, each of which she suckled for a full year, and that she now enjoys excellent health. There is no heart trouble, no goitre.

Case 3.—Graves' disease; obscure and abrupt cause; extreme nervousness, cardiac distress; death. No autopsy permitted.—Mrs. S., aged 36, no neurotic history; one child. Two years ago she seemed in perfect health, weighed 160 pounds. Happily married, surrounded by every luxury and loving care. Sustained no shock, no fright or exhausting disease. Fell into the hands of gynecic surgeons, who found displacements and tears, and repaired these, as it proved none too well. While sitting in perfect health at a theatre, not in the least excited or especially interested in the play, she suffered a nervous chill, and from that time the disorder rapidly grew. The chills frequently recurred, changing to what she described as "waves of feeling up and down the body;" on the slightest exertion sense of constriction in chest, and skin broke into a sweat. Afraid to step about the room. Bowels loose, slept badly, lying awake for hours feeling afraid. The disorder was not recognized.

Sent to Dr. Weir Mitchell with a description of "neurasthenia and heart disease," and through his courtesy I was allowed to see her repeatedly. She was a very excitable nervous woman, rather thin, weighing 110 pounds, with a frightened, restless expression. Eyes slightly prominent, some little slowness of upper lid, injection of cornea, tremor in voice, tremulousness of hands on movement, constantly plucking at bed clothes or handkerchief, or arranging her hair or dress; throbbing carotids, pulse of 125 to 135 lying, and very irregular, loud musical murmur, etc. Bronzed, glistening skin, chilly hands and feet, sweats readily, etc. Thyroid enlarged almost symmetrically conveying thrill to the hand. Some improvement under rest and tonics. Another operation was found necessary, and though slight, she sank and died. No autopsy allowed.

Case 4.—Graves' disease; slight exophthalmos; slight thyroid enlargement; cardiac disturbance; delusions and rapid loss of flesh; cause probably exhaustion from bearing ten children, and precipitated by sharp dysentery; recovery.—(By permission of Dr. Weir Mitchell and partly under my care.) Mrs. J., aged 39 years, family history good, most favorable surroundings; ten children; began a year ago to lose flesh rapidly during severe dysentery; appetite very poor since. Slight delusions; vertigo. Eyes only noticeably prominent; corneal vessels injected; restless expression; slight tremor; skin clammy and glistening; dyspnoea. Thyroid enlarged a little; heart noisy; no valve defect; very emotional; albumin and mucopus in urine. Under tonics and rest gained steadily. Referred to me at seashore in summer; rapidly picked up flesh and

strength there; gained forty pounds. Now describes herself to be in good health.

Case 5.—Graves' disease; slight ophthalmos; slight thyroid enlargement; cardiac disturbance and tremor; improvement.—Miss R., aged 25, history good. At 10 years had typhoid fever, at 11 very severe dysentery; long in regaining strength; much headache at 19 years, an illness began by neuralgia in face and marked prostration; noticed rapid breathing; soon eyes were remarked as being "curious looking;" tried to gain strength by exercise in open air. In 1881 again fell ill. In March, 1882, consulted Dr. Seguin, who pronounced unfavorably; at that time had much oedema in legs; ordered digitalis; quiet. Following November grew much better; partly in bed for several months. December, 1883, she saw another physician who relieved the increasing diarrhoea. May, 1881, to May, 1884, menstruated only once; thence irregular till a year ago, since then fairly regular. Weight about 135; skin moist and shiny; beads of sweat on upper lip; tremulous lip and tremor in voice, this seems a constant feature; at times tremor in muscles elsewhere. Exophthalmos slight; von Graefe's sign in both eyes; pupils normal; corneal vessels injected; flushes readily; not pale; heart tumultuous; no valve defect; pulse intermittent, one beat in three or seven, very difficult to count. Thyroid enlarged symmetrically; well-marked thrill; loud bruit in right neck; buzzing in head; sweats almost constantly; respiration 28, sighing; dyspnoea great on slight exertion; cannot lie in bed at night; bowels loose.

Rapidly improved in most respects under treatment by regulated living, digitalis, and belladonna, tonics, iron, etc.; salt sponging; hot hip baths; menstruation more comfortable. In January had an attack of nervousness at night time, sense of great pressure in head and flashes of heat over body; ringing in ears. Eyes were examined by Dr. de Schweinitz, who found slight hypermetropic astigmatism; no fundus lesion. Alternate hot and cold water to nape of neck relieved the sounds in head. Is steadily improving to date.

Case 6.—Miss D., aged 24, family history decidedly neurotic. Mother "queer." At one year scarlet fever followed by water on the brain; soon recovered good health. Menstruated at 15.

August, 1885. Dysentery.

December, 1885. Heart began to alarm her. Vertigo sitting or walking; grew weak, short of breath, and extremely nervous; could not sleep, began to groan loudly in sleep, which continued till recently. Skin itches intolerably; sweats readily on exertion. Roaring noises in the head. Legs swollen, also feet—"the buttons were burst from the shoes."

March, 1886. Neck enlarged. In May the eyes started forward. Appearance: eyes very prominent, sclerotic shows half an inch or more above and below, lids puffed, corneal vessels injected, face bloated and livid, skin greasy. Thyroid enlarged in three directions, most on the right; neck thirteen and three-quarters inches. Heart sounds clear; impulse heaving; slight systolic whirr. Pulse regular,

112 standing. Bowels very loose; tremulous voice. Eyes examined by Dr. Hansell show some accommodative defects, but no fundus lesion. Urine albuminous. Decided delusions. No improvement.

Case 7.—Miss M. D., sister to above, well-grown girl, well till a year ago, when she had "walking typhoid;" afterward very weak; fainting spells; vertigo on walking; sweats readily; constantly chilly; especially the hands and feet. Buzzing in the ears. Menstruated at 13, but extremely irregular; rarely lasts over two days. Eyes showed no lid sign; no exophthalmos. Thyroid enlargement right; neck twelve and three-quarters inches. Heart quick and feeble; muffled sounds; roaring noise over the right clavicle and through the thyroid, also marked thrill. Carotids pulsating visibly. Pulse 128 to 130. Very pale. Is improving.

Case 8.—Mrs. S., aged 46; mother living, a "fidgety" woman, has two children. Fairly good health till 1881, when she had typhoid fever, followed by large abscess in the abdomen, opened in two places. Treated in the Jewish Hospital. After this shortness of breath began. In 1881 a financial blow greatly worried her; she would sit and brood over her troubles, then the fever. Exophthalmos began, along with diarrhoea; sweated a great deal on both sides. Buzzing in the ears. Appearance: strongly built woman, weight 130 pounds; skin muddy and dusky. Left eye very prominent, right less so; lid signs of both eyes. Carotids throb moderately. Heart sounds clear and distinct; slight bruit. Has been under treatment for eight or nine months. Digitalis and iron and belladonna. Dyspnoea greatest on cold days. Urine at times profuse; no albumen. Oedema of legs fluctuates. Is steadily recovering, though susceptible to fatigue, cold, and shocks.

I hope to discuss the treatment, on which I have some decided opinions, on another occasion. This consists mainly of rest, judicious feeding, tonics, and carefully selected sedative measures.

Competent glasses, too, are essential; at times sharp counter-irritation, especially diuretic remedies and attention to the emunctories. Galvanism, too, has immense value in some instances, but requires judgment in selection of cases.

In brief, whatever measures tend to repair the tone of the vascular system and allay nervous excitability will best bring about gratifying results.

ELECTRICITY IN MODERN MEDICINE.

Read before the Medical Society of the District of Columbia, December 7, 1887.

BY ROBERT REYBURN, M.D.,

OF WASHINGTON, D. C.,

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY IN HOWARD UNIVERSITY.

About one hundred years ago, a Professor in the University of Bologna, named Galvani, was experimenting with the nerves of the lower extremity of a recently killed frog. He found that by placing a piece of zinc under the upper portion of the nerves, and touch-

ing the upper portion of the nerves with a piece of copper wire violent contractions of the thigh muscles would immediately ensue. Very likely others before him had observed the same phenomenon, and had looked upon it with simple curiosity without caring to inquire why this was so. Prof. Galvani, however, was not of this class, and he pondered the matter, as in the presence of his students he over and over again repeated his experiments. His final conclusion was that a mysterious and occult form of animal electricity was produced, having the power to act upon the nerves, and thence to the muscles of the body; and this force has been called, from its discoverer, Galvanism.

Little did Galvani know how far-reaching and wonderful would be the results of the discovery he had made to the comfort, health, and even lives of his fellow-men. Another Professor, in a rival University, that of Pavia, Professor Volta, repeated the experiments of Professor Galvani and confirmed the facts but could not agree with the explanation given. He asserted that the contact of the different metals was the cause of the galvanic current which produced the contractions in the legs of the frog. Hot and furious raged the contest between the partisans of the two theories of galvanism for many years, but we now know with certainty that Professor Volta's theory was more nearly the correct one; to this is due the fact that this force is called, indifferently, galvanic or voltaic electricity. Professor Galvani, the first discoverer, found, like many another man, that his labors to a great extent were simply the scaffolding upon which others climbed to still higher heights of science. Faraday then still farther carried on the theory of galvanic electricity, and showed that the amount of the galvanic current present is directly dependent upon and proportionate to the amount of chemical action. But the time fails me even to mention the names of the many great men who have devoted their lives to the development of electrical science. To Ohm we owe the celebrated law of electricity that has brought it from empiricism to those of exact science, and the labors of Seebeck, Oersted, and Ampère have marvellously aided in its development.

But "*cui bono*," as the Spanish say, is all this history of the progress of galvanism. I now turn to what is a much more interesting topic to the layman as well to the medical man, namely, the application of galvanic or voltaic electricity to the cure of disease. Most persons know that a galvanic battery, so-called, is composed of plates of zinc, copper, or of other metals that are immersed in acids or chemical solutions. The terminal plates have attached to them wires or connecting metallic cords, which are called the negative and positive poles of the battery. When we touch or connect the poles of the battery together we find that a certain force, namely, the galvanic current, so-called, is developed capable of producing certain changes in the body. If the galvanic current is passed through a coil of wire under certain conditions of rapid alterations of the current we have a somewhat disagreeable feeling known by the name of the galvanic shock, which is accompanied by vio-

lent contractions of the muscles of the body. While the galvanic shock is a valuable addition to the armamentarium of the physician in treating cases of paralysis accompanied by atrophy or wasting away of the muscles, or in cases that require a stimulating application, yet, after all, the use of this kind of galvanism is comparatively limited and insignificant compared with the benefits derived from continuous, gentle, yet powerful applications of this wonderful remedial agent. It is found that by placing the two poles of the battery carrying the galvanic current in contact with the external or internal parts of the body, that the most powerful effects may be produced. Tumors and neoplasms of all kinds, for instance, may be dissolved without the use of the knife or caustic destructive agents, or in any way injuring the textures or vital organs of the body.

In order to show that this is possible, I will simply give you a sketch of what has been done by Prof. Apostoli and others for tumors and morbid conditions of the abdomen, more especially in females. In his paper read before the British Medical Association, in Dublin, Aug. 2, 1887, Prof. Apostoli said that during the five years from July, 1882, to July 1887, he had treated 403 patients, and made to these patients 5201 applications of electricity. Two hundred and seventy-eight of these patients suffered from fibroid tumors of the uterus, or uterine hyperplasia of various kinds. Space will not permit me to go into details but the final result is that 95 per cent. of those persons were cured, and restored to a condition of usefulness to their families and to society, and out of the entire number only two died during the treatment. These results so far surpass any other method of treatment ever adopted as to attract the attention of physicians of all countries, and in our own country Drs. Marcy, Newman, Cutter, Martin and Garrett have likewise adopted it with great success.

It will be necessary to explain to those that have not studied the laws of electricity, that when the positive and negative poles or terminals of a galvanic battery are placed in a fluid it is decomposed and the components of the fluid arrange themselves in a certain order around each pole, oxygen, chlorine, iodine, etc., arranging themselves around the positive pole, and hydrogen, the metals, etc., arranging themselves around and in contact with the negative pole. Prof. Apostoli, by the use of very powerful currents of electricity, from 50 to 150 milliampères, and sometimes using even as high as 200 milliampères, actually produced a galvano-caustic and electrolytic effect, which effectually dissolves the tissues of the tumor and causes its disappearance without the use of the knife. He also uses the electro-caustic method.

The objection may be raised that if the powerful galvanic currents can dissolve the substance of tumors why do they not dissolve the healthy tissues? The answer to this probably is, that in the first place morbid growths such as tumors and hyperplasia of vital organs have not the same resisting power or vitality as the healthy parts of the body. A tumor, for instance, is much more easily injured by a blow or other hurt than the healthy organs. It will inflame or even ulcerate by an amount of violence that would

not apparently wound the body in the natural or healthy condition. Another reason for this exemption from injury in the application of these strong currents is the precautions taken in using large electrodes or poles when applying them to the body. As the strength of the current is to a certain extent in proportion to the square surface of the electrodes or poles if, for example, we apply a certain strength of current to an electrode one square inch in area, by increasing the area of the electrode to one hundred square inches we give the current one hundred times as strong with little more disturbance of the parts than when employing the weaker current. In order to prevent injury to the external parts of the body the external electrode is covered with wetted clay, cloth, flannel, wet sponges, etc. The negative pole is usually placed in contact with the tumor and the positive pole on the outer surface of the body adjacent to the tumor or inserted into the substance of the tumor. The positive pole, you will remember, is always the one by which the electric current leaves the battery, and the negative pole the one by which it reenters it. The positive pole has very powerful properties in arresting hæmorrhage from tumors, and hence is frequently applied in that class of cases with very beneficial results.

Dr. Alfred C. Garrett, of Boston, reported to the Ninth International Medical Congress, recently held in Washington, 184 tumors of the breast treated by galvanism, from 1864 to the present time, in his practice. One hundred and fifty-seven of these were cured and disappeared entirely. Several others did not become quite obliterated and a small lump remained that gave no inconvenience. In every case the tumor disappeared or became harmless. He also recommends the use of soft, large poles with currents of from 10 to 50 milliamperes.

Dr. Ephraim Cutter reports 400 cases of fibroid tumors treated by electricity, with the greater portion relieved. Dr. F. H. Martin, of Chicago, read a very interesting paper upon the electrical treatment of fibroid tumors, before the Gynecological Section of the Ninth International Medical Congress, and enumerates the following advantages of this method of treatment, viz.:

1. It is entirely free from danger.
2. It is absolutely painless.
3. It invariably checks hæmorrhage.
4. It rapidly reduces the size of tumors.
5. It relieves neuralgic pains.
6. It admits of exact dosage, so that we know exactly how strong a current we are using.

Dr. R. Newman, of New York, reported to the Section on Surgery, American Medical Association, which met in Chicago, June, 1887, his record of 100 cases of stricture, making 200 in all, which have been cured by the galvanic current. The concurrent testimony given, and which might be largely augmented if necessary, shows clearly that we have in galvanic electricity a most potent remedial agent, which is to revolutionize some of the branches of the healing art.

I have mentioned several times the words *ampère* and *milliampère*, and it may be necessary in explana-

tion to state that the ampère is the measure of the strength in intensity of the galvanic current. Let us imagine the galvanic current flowing along the wires connecting the poles like the flow of water in a river. As the water flows along the banks with greater or less friction, the rapidity of the current is retarded or accelerated; just so with the galvanic current. It is retarded in its progress more or less, and this resistance to the current we can measure. The unit of resistance, or rather rate of velocity, is called the *ohm*, from the celebrated scientist, and is composed of a column of mercury one square millimetre in section and 106 centimetres in length. The unit of the intensity of the current is the ampère, from the name of the distinguished French electro-physicist.

To give this concrete expression, it may be stated that an ampère represents the quantity of galvanic electricity generated by the unit of electro-motor force, the volt circulating in a conductor having the unit of resistance the ohm, during the unit of time. The volt is the measure of pressure or difference of potential of the current. It has been ascertained practically that this is the quantity of electricity furnished by a Daniell's battery. Having now obtained a standard, namely, the ampère, we can measure the intensity of our electric current just as accurately and almost as easily as we can measure a distance upon the earth by the use of the English yard or the French metre. The instrument by which this is done I now show you, and it is called the milliamperemeter. As its name implies, it is a measure of the intensity of the electric current, and enables us to know just as exactly the dose of galvanic electricity we are administering as we know the dose of medicine we are giving to a patient. It is capable of measuring from one-tenth of a milliampère to 500 milliampères, and is destined to do as much for the application of electricity to medicine as the use of the clinical thermometer has done in accurately determining the amount of fever present in a patient.

PAPILLOMATOUS CYSTIC TUMOR OF OVARY, WITH A HERNIAL POUCH DEVELOPED IN THE CICA- TRIX OF THE ABDOMINAL WOUND FROM A FORMER OVARIOTOMY.

Read before the St. Louis Medical Society, March 10, 1888,

BY L. H. LAIDLEY, M.D.,

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FEMALE HOSPITAL.

Mrs. C., æt. 39, American, married, had one child which is now eight years old, gave the following history: She was of healthy parents, menstruated at 14 years, was a healthy girl, married at 22. Eight years ago she had an ovarian tumor removed from the left side (it was a large, multilocular, benign ovarian tumor). One year after the operation she was delivered of a child at full term. The recent operation and the pregnancy developed a large hernial pouch, which allowed the bowels to protrude, forming a tumor as large as a child's head at full

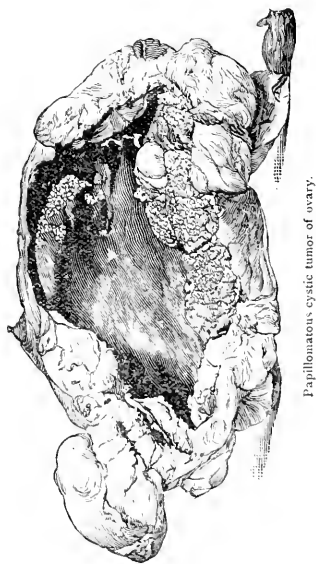
period. No instrument could be made to keep the hernia in position, and for the past two years she was confined to the house. Eleven months prior to my first visit another tumor made its appearance, beginning in the right iliac region; it developed rapidly, occupying a position on the right side which could readily be felt through the hernial sac. Five months after its first appearance a "magnetic doctor" was allowed to treat the case, which he did by "the laying on of hands," in this case rather roughly, as the results will show. This doctor claimed "to coax the fluid out through the Fallopian tubes." When the tumor was pressed upon the patient noticed a great rush of water with blood from the vagina. This was repeated some time afterwards with the same results, the tumor almost disappearing.

I was called last November, and found a deplorable state of general health; anæmic, appetite poor, and patient so weak that she could not go from her chair to the bed without considerable fatigue. She had a distinct mitral bruit, weak and rapid pulse, temperature 100° F. I continued to visit her for one month, feeding and administering medicines to build her up. She urged an early operation. An examination of the abdomen revealed a tumor in the right iliac region as large as the head of a child at full period, which was fluctuating, movable, and easily defined by percussion. The uterus was plainly felt through the hernial pouch, separate from the tumor. Change of position did not influence its shape. No cedema of lower extremities, nor abdominal dropsy. Examination *per vaginam* showed a violent vaginitis with an opening through the floor of Douglas' cul-de-sac, which allowed the passage of a sound in the direction of the base of the tumor. A fluid escaped through the opening; pressure on the tumor increased the flow. That which escaped was white in color and mixed with blood. The amount of flow a day was estimated by the patient to be one pint. Diagnosis: Cystic tumor of right ovary, probably unilocular, with fistulous opening into vagina.

An operation was performed December 6, with every antiseptic precaution, assisted by Profs. Coles and Graves, and members of the senior class of the Beaumont Hospital Medical College. An elliptic incision was made over the site of the tumor, at least seven inches in length, the tumor exposed and the fluid drawn off, which was the same that flowed from the opening into the vagina. There was only one adhesion to the tumor; that of the extremity of the appendix vermiformis. This was torn off with the finger nail, and the end cauterized, completely controlling hæmorrhage. (Greig Smith reports his having to remove the entire organ without serious results.) The tumor was lifted from its broad base, which was transfixed at its attachments to the floor of the pelvis, the ligature tied, and all that remained of the sac charred with a hot iron. Another ligature was placed below, and entirely around the pedicle, so as to close any opening that might exist with the fistula leading to the vagina.

Attention was now given to the hernial sac. Before operating the line of incision was mapped out with iodine so as to remove all the pouch, and at the

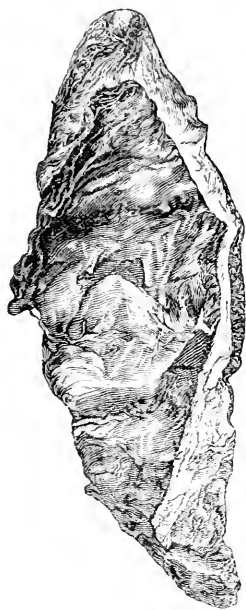
same time be able to approximate the walls. The measurements before operation were seven inches by four and a half inches; a portion of the mesentery was attached to the cicatrix of the old wound, and it was ligated, cut and returned to the abdomen. The cavity was thoroughly cleansed of blood, the edges of the wound (closed with sutures less than one-half inch apart) were made to coaptate accurately, a drainage-tube was placed in the lower angle of the wound, the parts dressed antiseptically, and the patient put to bed. Reaction was complete within two hours, and for the first time since November her temperature was less than 100° F. A most aggravating nausea, which would not yield to any of the prescribed remedies, necessitated feeding per rectum from the first day. The temperature range for the first twenty-four hours was 99° to 99.8° , pulse 72 to 80. She did not sleep more than one-half hour during the night. On the second day the temperature continued less than 100° until 9 P.M., when it rapidly rose to 103.8° ; the pulse was rapid and weak, a dusky hue of the face was present with constant nausea, which forbade anything remaining in the stomach.



Papillomatous cystic tumor of ovary.

Believing that I had an incipient peritonitis to deal with, I ordered calomel, grs. iijss, placed upon the tongue, which was the first retained since the operation. I continued the dose every half hour until ten grains was used, when I gave every hour mag. sulph. grs. xx—two doses were given. At 2 A.M. the next morning, by the use of a rectal tube, a half pint of thin fecal matter was expelled, which was followed by an enema, and the bowels thor-

oroughly cleaned out; flatus for the first time began to pass; the patient became free from pain and slept for six hours. The temperature went down to 99.6°. From this time she retained food, and showed nothing unusual in the progress of the case. On the seventh day the stitches were all removed (the tube having been removed on the fifth day) showing the walls had united by first intention. A well-fitting truss, made from the cast of the abdomen, was adjusted four weeks later, which allowed the patient to go about the room with comfort. Examined three months later, she was much improved in health, the fistulous opening into the vagina had closed, and the operation had proven entirely satisfactory. I submitted the tumor for examination to Dr. Adolf Alt, who said it was of the papillomatous form.



Hemal pouch, showing shallow secondary punctures in peritoneum.

Coblenz believes that when ovarian tumors show a papillomatous development they invariably arise at the hilum of the ovary; this form is the most common affecting these organs, and like villous growths elsewhere is not always malignant. In the malignant form papillary growths will be found in patches upon adjacent structures, or else the womb and broad ligaments are also involved in one cauliflower-like tumor. Tait observes that he has had two cases of ovariectomy in which he left large masses of papilloma attached to the womb, yet in each case these masses wholly disappeared and the patients are both in perfect health. If this is true, may we not hope that this specimen is a benign tumor?

This tumor was roughly handled five months be-

fore the operation, causing the fistulous opening. May we not conclude, if it is true, as Tait and Bantock claim, that tapping hastens degeneration, and after an accidental rupture of such a cyst the peritoneum will be found studded with patches of papillary cancer (hence they argue that ovarian tumors should never be tapped and that they should be removed in their earliest stages before any malignant transformations have taken place), that had this tumor been removed entire at the time it was injured, there would be no question that it would not return?

Grant and Washington Aves.

SIMULTANEOUS TRIPLE AMPUTATION FOR RAILWAY INJURY, WITH REMARKS ON THE TECHNIQUE OF MULTIPLE AMPUTATION.

Remarks before the College of Physicians of Philadelphia, Mar 17, 1888.

BY JOHN ASHMEUR, JR., M.D.,

PROFESSOR OF SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE UNLAKED HOSPITAL.

This patient is brought before the College largely on account of the rareness of simultaneous triple major amputations. It is quite possible that some of the Fellows may not have had an opportunity of seeing such a case.

The patient is a Moor, 20 years of age. He was admitted to the University Hospital November 28, 1887, having been run over on the Pennsylvania Railroad. I saw him within two hours after his admission. I found a compound comminuted fracture of the right leg, the laceration extending above the knee; complete avulsion of the left leg, the limb having been torn off in its lower third; and a compound fracture of a severe character of the right hand and wrist. There was also a compound fracture of the skull, involving the frontal bone. This, however, was an impacted fracture, of course without much depression, and did not require interference. In addition to these injuries there were numerous burns and contusions, some of a grave character. One upon the left buttock was so severe that the separation of the slough left a cavity fully two inches in depth. Notwithstanding these serious injuries, the patient's general condition was very good; he had reacted thoroughly, and his axillary temperature was 99° F. Under these circumstances I felt justified in proceeding to the immediate re-removal of the injured limbs, and amputated successively the right thigh by the antero-posterior flap method; the left leg, about its middle, by a modified Sédillot's external flap operation, the modification consisting in making both flaps from without inward, instead of cutting the external flap by transfixion; and the right forearm by an oval incision, making use of the uninjured skin of the back of the hand and wrist. Certain variations from the ordinary procedure in amputations I shall refer to when I come to speak of what I have ventured to term the technique of multiple amputations. After the operations were completed, the temperature had fallen only to 98° F. The patient had no bad symptom and rapidly recovered, and as you

see him now all his wounds are perfectly healed, and he is entirely well.

I have collected some statistics of synchronous multiple amputations. I am able to find but one instance of *quadruple* synchronous amputation—a case in which the operations were done for frost-bite by Dr. George E. Jackson, of Dakota. There are several cases recorded of multiple amputations, not synchronous, the one which approaches nearest to a synchronous operation being that of Champenois, a French surgeon, who amputated three limbs on one day and the fourth a few days later.

Of synchronous triple amputation there have been reported four successful cases, not including that presented to-night: one by Dr. Kohler, of Schnylkill Haven, Pa.; one by Dr. Lowman, of Johnstown, Pa.; and two referred to by Professor Agnew, in his *Surgery*, one occurring in the practice of Dr. Stone, of New Orleans, and the other in York, the name of the surgeon not being given. There are reported four or five triple amputations not synchronous. I have myself resorted to synchronous triple amputation in two cases. Several years ago I had occasion to perform this operation, removing both legs and the right forearm of a man *æt.* 45 years, of intemperate habits. The patient died on the tenth day, the fatal result being due rather to the visceral lesions resulting from alcoholism than to the operation.

Double amputations are comparatively numerous. I have personally performed fifteen such operations, this number not including two successful cases of double partial amputation of the feet. I have done fifteen double major amputations, of which five have ended in recovery. One of the patients who recovered I had the honor of exhibiting to the College some years ago; the amputations in his case were through the right hip-joint and through the left leg. In the fatal cases, seven of the deaths occurred in less than one day, the immediate result of the shock of the injury and of the operation. Three patients died, one in three days, one in four days, and the third in eighteen days. The latter would probably have recovered but that he also had suppurative disease of the middle ear, which appeared to be the cause of the pyæmia which proved fatal; for when the stumps were examined, after death, they were found to be in good condition.

With regard to what I have termed the technique of multiple amputations, there are some points which my experience justifies me in urging upon surgeons as of importance in promoting success: In the first place, it is very important that the time occupied by the operations should be brief; that the operations should be done systematically, so as to keep the patient under the anæsthetic as short a time as possible. The next point, perhaps of even more importance, is to keep up the temperature of the patient during the operations. I have been led to think that this is, perhaps, of more importance than anything else. Of course, loss of blood must be scrupulously guarded against, and loss of blood directly causes loss of temperature. In this case, hot cans were kept around the patient during the entire operation, and in order to save time I operated systematically, the

tourniquet and Esmarch bandage being both employed to prevent any loss of blood. I began with the most serious injury, and this is, I think, a point of importance. It may happen that, after the removal of one limb, it will be found that further operation must be postponed on account of the patient's condition, and then it is, of course, better to leave him with the less severe injuries. In this case I began with the thigh. After amputating the limb, I secured the main vessels, which were readily found. I attempted to tie the arteries with catgut, but as the ligatures broke, I substituted silk and, in order to save time, left both ends uncut. I next amputated the right leg, securing the vessels in the same manner, and then passed to the forearm. I then came back to the right thigh, screwed up the tourniquet and removed the Esmarch bandage, and secured all the vessels that required ligature, then passing to the other limbs in the same order as before. After the vessels had been secured in each case, a towel dipped in a hot antiseptic solution was placed between the flaps. The wounds were then dressed in the same order, and in this way the operation was completed in a comparatively short time.

The points which I have mentioned I believe to be of great importance, and I think that much of the disappointment of surgeons from these operations is due to a want of attention to these matters.

I should also say that, in order to preserve the bodily heat, I did not use irrigation during the amputations. I think that this often seriously reduces the temperature, and even in comparatively slight operations where it has been used, I have seen the temperature fall to 97° F., and even 95° F. I think that in any grave case, it is better to omit it and to rely upon washing with hot antiseptic solutions before and after the operation. Also, the packing of wet towels around the seat of operation, as is very commonly done, tends to depress the temperature, and in grave cases should be omitted.

I think that it is to an observance of these precautions that I have owed success in this case, and in many other serious operations of various character.

MEDICAL PROGRESS.

PHYSICS OF THE MALE URETHRA.—MR. W. W. WAGSTAFFE says: I have been struck, during the passage of catheters and bongsies in the out-patient room, with the fact that a natural twist is given to the instrument during its removal from the bladder and urethra of the male, a rotation very sensible to the feel, especially when light and flexible instruments are used. In order, therefore, to test the accuracy of one's impression I have adopted, after various trials, the simple one of using a bougie à boule of medium size (about No. 10 of English measurement). This is passed thoroughly into the bladder, and then withdrawn until a check is felt by the neck of the bladder. From this point the observation starts, and the distances are taken from this start point.

The degrees of rotation are estimated by means of a pin fixed vertically into the stem of the bougie just outside the meatus. The bougie à boule having so fine a stem, and a bulbous end which can be readily grasped by the part of the urethra it is in contact with, is rotated with readiness, and I have therefore been careful to avoid any rotation being given to it by external means. I have found that the simplest means of withdrawing the bougie has been by a piece of fine silk noosed round the stem near the top. After its first start, however, so little traction is necessary that the observations have to be taken promptly, as the instrument is passing often without any external traction. The shape of the bulb of the bougie à boule no doubt helps to explain this forward movement, as the urethra contracts upon a conical mass. Where stricture is said to have existed in these cases it was either very slight or imaginary, for the bougie equal to No. 10 English passed without difficulty. When a rather larger instrument was used no material difference was noticeable in the results, but, as may be seen in Obs. ix and x, a larger instrument sometimes showed the results more clearly; and in this case the urethra was larger than usual.

The first result of these observations is that in all the cases the direction of the rotation given to the bougie is the same. In one case the rotation began with a small divergence to the patient's right side, but this was followed by the usual rotation to the patient's left. In all the other cases rotation began at once to the patient's left for a certain distance and to a certain degree—generally making the index stand directly opposite its original position—passing, that is to say, through 180° or half a circle. This position was reached when the instrument had passed about 4 inches from its start, and then began a reverse rotation, usually, but not invariably, until the index stood at right angles to the start. An explanation of the phenomenon is probably to be found in the peculiar construction of the urethra. In the ordinary (collapsed) state the canal is represented by a fissure bounded by columns of mucous membrane which may be traced from the bladder outwards, running in the direction of an elongated spiral and causing progressive alteration in the form of the channel. The change begins in the prostatic urethra, where the tube as seen in transverse section takes the form of an inverted U, owing to the upward projection of the verumontanum. It is at this point that the rotation of the catheter begins. At the apex of the prostate the fissure is shorter and horizontal, with only a slight convexity forward. In the membranous urethra the section becomes stellate, in the bulbous horizontal, with a slight sinuosity. The latter form is maintained through the greater part of the penile portion of the canal, but in approaching the glans is gradually replaced by an inverted T, the vertical limb of which, at first very short, gradually elongates, while at the same time the horizontal limb becomes shorter and at length disappears, leaving a single perpendicular slit that ends at the external meatus.

In tracing out these changes carefully upon the subject it will be found that the urethra is rifled

somewhat after the manner of a gun-barrel, but the spiral of the urethral tube, which runs from right to left in about the upper three fourths of its length, usually becomes reversed near its distal extremity. The object of the spiral grooving in the case of the gun is to secure for the projectile a rotatory motion and greater precision in the direction of aim, and we may fairly assume that similar advantages of a physiological nature are gained for the outflow of the urine and semen by the arrangement of the urethral column.

The practical application of these observations is not yet obvious, but it is a question whether the arrangement of the urethral mucous membrane may not point to the kind of rotation which would render most easy the introduction of a catheter.—*St. Thomas' Hospital Reports*, vol. xvi.

OPERATIONS FOR RECTAL FISTULA.—GREFFRATH reports 61 cases of rectal fistula operated on in the Heidelberg Polyclinic. The fistula occurred between the ages of 20 and 40 years in 57.4 per cent. of all cases. The youngest patient was 6 months old. Only 1 case occurred in a woman. The fistula was incomplete external in 65.5 per cent.; incomplete internal in 4.9 per cent.; and complete in 29.5 per cent. Of the incomplete external (33 cases noted) the fistula was lateral, between the anus and tuber ischii in right side, in 24.2 per cent.; on left side, same situation, 39.4 per cent.; around the anus, with different openings, 24.2 per cent.; external opening in the middle line behind the anus in 12.2 per cent. The seat of the incomplete internal fistula was in every case just above the external sphincter. Of the complete fistulae (noted in 17 cases) the seat was on the left between the anus and tuber ischii in 41.2 per cent.; right, same situation, 17.6 per cent.; around the anus, with different openings, 5.9 per cent.; external fistulous opening posterior 23.5 per cent.; anterior 11.7 per cent.

Of the 61 cases 10 had symptoms of pulmonary tuberculosis, 7 had hereditary tendency to tuberculosis, 2 had diabetes. Of the patients 2 had had acute rheumatism, 1 attributed his trouble to long-standing hemorrhoids, 1 to eczema, 3 to local injury. In 9 the fistula seemed to have come on spontaneously, and 43 gave the history of a small abscess having formed and caused the trouble.

In 16 cases the fistula was operated on by means of the knife, in 43 with the thermo-cautery. Of the 16 operated on with the knife 11 had normal internal organs, 3 had symptoms of pulmonary tuberculosis, and 2 had hereditary tendency. Of the 11 with healthy organs 80 per cent. were completely cured, 1 died (of tabes?), and 1 was not completely cured. Of the 3 phthisics 1 died of sepsis, 1 was not cured, 1 lost sight of. Of the 2 with hereditary tendency 1 was not cured, 1 lost sight of.

Of the 30 cases with healthy organs treated with the thermo-cautery 4 were lost sight of, 22 were

¹It is sometimes stated that a twisted stream is one of the early signs of stricture, but this is misleading, since the normal outflow is always perceptibly spiral. This phenomenon is perhaps not altogether due to the urethral rifling, since it has been found that water forced out of a narrow, smooth-edged slit does not continue in a straight "tape" jet, but is shot out as a spiral.

completely cured (85 per cent.), 3 not completely cured, 1 died (presumably of phthisis). Of the 5 with hereditary tendency 2 were completely cured, 2 died of phthisis (whether fistula was cured or not is not known), and 1 died, with questionable diagnosis. Of the 7 with phthisis treated with the thermo-cautery 2 were lost sight of, 1 completely cured, 2 not cured, 2 died of phthisis, uncured.

Grefrath concludes thus:

1. The eschar made by the thermo-cautery protects the wounded surface better from infecting material from the first day, and with care the patient may go to stool on the first or second day after the operation.

2. The operation can be done in a few moments without hæmorrhage of any importance.

3. Better granulations are obtainable from the thermo-cautery than after the use of the knife.

4. The eschar of the cautery makes the immediate adhesion of the wounded surfaces impossible.

After the use of the thermo-cautery antiseptics can be carried out more efficiently, and Grefrath recommends iodoform as an excellent antiseptic in these cases. At the conclusion of the operation the whole wound is disinfected with a 5 per cent. solution of chloride of zinc, and then iodoform is applied.

Grefrath's cases and results lead him to consider the question of operating on rectal fistulæ in phthisical patients. He concludes that:

1. There is a causal nexus between tuberculosis and rectal fistulæ, but tuberculosis does not contraindicate operation on the fistulæ.

2. Fistulæ form in diabetics on account of inflammation of the cellular tissue, and patients suffering from rectal fistulæ should have their urine examined for sugar.—*Deutsche Zeitschrift für Chirurgie*, Bd. 26, Hft. 1 and 2.

ANTHRAROBIN IN DERMATOLOGY.—Anthrabin is a product intermediate between chrysarobin and pyrogallie acid, superior to the second, and without the inconveniences of the first. It is a yellow powder, soluble in 10 parts of pure glycerine and in 5 parts of absolute alcohol at 100°, and more soluble in the latter in the proportion of 1:2 at a temperature of 15° C. When applied to the skin it colors it yellow, and causes a slight sensation of dryness.

According to Liebermann and Behrend it is used by bathing the affected part with the alcoholic tincture or with a 10 per cent. glycerole, and inunction with a 10 to 20 per cent. pomade. Its application should be preceded by bathing the affected part with an alcoholic solution of potash soap. Its indications are those of chrysarobin. In psoriasis it is applied by friction with a brush, after removing the crusts. In herpes tonsurans Behrend claims that it is equal to chrysarobin.—*Revue Gén. de Clinique et de Thérap.*—March 22, 1888.

CREASOTE IN PHTHISIS.—VON BRUNN has treated 1700 cases of phthisis with creasote in 8 years, and with good results. The cases were both ambulatory, in which there was but little rise of temperature, and cases of active tuberculosis. The best results were

had in acute cases in which the temperature became almost stationary after a period of fever, and in which, as a rule, the lesion was catarrhal and unilateral. Von Brunn thinks it unwise to give less than 6 or 7 m of creasote a day; he has not given more than 7 m, and thinks it necessary to continue treatment for several months. The more creasote the patient can bear, the better, he thinks. He uses the the creasote wine originally prescribed by Bouchard:

Creasote.....	13 parts.
Tr. gentian.....	30 "
Alcohol.....	250 "
Fokay or Malaga wine.....	ad 1000 "

One teaspoonful well diluted with water three times a day.—*Berlin klin. Wochenschrift*, Feb. 20, 1888.

ITALIAN TREATMENT OF PULMONARY TUBERCULOSIS.—PROF. ENRICO DE RENZI (*Il Morgagni*, abstract in *Centralbl. für d. gesammte Therapie*, February, 1888), passes under review the influence of creasote by the stomach and by inhalation; of iodoform, turpentine, iron, sulphuretted hydrogen, sulphurous acid, etc., by inhalation, and of the gaseous rectal injections.

Excellent results were had from the iodoform inhalations, and also from sulphuretted hydrogen. Creasote in considerable doses greatly lessened the bronchial muco-pus and the purulent matter of cavities, and exercised a favorable influence over the general nutrition. The following formula was used:

Creasote (pure).....	5 parts.
Alcohol.....	100 "
Balsam of Peru syrup.....	" "
Water.....	" "
Dose, 1 tablespoonful.	

The rectal ga injections exercised a favorable influence on cough and expectoration, but had no effect on the existing pulmonary lesions.

He concludes that the most clearly curative effects are obtained by large use of iodine and iodoform.—*Amer. Jour. of the Med. Sciences*, April, 1888.

STOPPAGE OF THE NATURAL FLOW OF URINE, says ULTZMANN, may be caused by:

1. Occlusion of the smaller urinary tubes, as in cholera and any of the renal diseases.

2. By occlusion, twists, and turns in the urethra. Ultzmann records the case of a man, æt. 43 years, with calculus of the kidney, who suddenly developed anuria, which caused death in two weeks. The autopsy showed a cyst of the left kidney as large as a goose-egg, with obliteration of the ureter, and on the right side an enlarged kidney, with three small stones filling the ureter.

3. By a tumor of the bladder.—*Internat klin. Rundschau*, Nos. 9-17, 1887.

ointment FOR SCABIES.—LASSAR uses the following ointment:

Naphthol, grm. 5—10
Gum soap
Precipitated chalk
Washed sulphur
London 33 grm. 25.

—*Jour. Cutan. and Genito-Urinary Diseases*, February, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, APRIL 14, 1888.

THE PUBLIC AND PUBLIC HEALTH.

Desired advances in public health reforms and legislation can scarcely be hoped for in a country of universal suffrage until the public, and especially the leaders of the public, are educated up to the point of knowing what public health, in its broadest sense, means, and until it is made plain to them that the whole matter may be reduced to one of dollars and cents. Business men are always ready and willing to listen to any one who can show them how dollars and cents may be made and saved. The public press, recognizing this fact, is always willing to publish anything that will show people how to save or make money.

But the public and the press want something more than ambiguous statements; they want facts and figures, that carry conviction on their face. It is not enough to tell them that certain sanitary reforms and measures have saved lives and money to a country; they want to know how many lives, how many years of aggregate life, and how many dollars. *Populus vult decipi* is a hackneyed and often untrue saying. People do not wish to be deceived. In the majority of cases in which they are deceived, they act on the best of their knowledge and belief; they have not been taught what is best for them, and pursue the wrong path because they cannot read the sign-board that is so plain to the more fortunately educated.

Public health legislation and medical legislation have been and are difficult to secure by popular vote because the people are inclined to look upon such as class legislation. An example of this tendency may

be found in the *Congressional Record*, of March 27, in the ten-page debate on the anatomical bill for the District of Columbia. The members of the House that opposed it showed, by their objections and the foolish amendments offered for the purpose of making the bill non-operative, or of killing it, that they regarded it as a piece of legislation entirely for the good of the medical profession, and hence for the detriment of all other classes of people. Such ideas are fostered and disseminated by the public press, especially in new countries, and in the newer and more recently civilized parts of new countries, where an assumed title of "Professor" carries more weight than utterances of modest wisdom. Members of the press seem to reason as follows: People that advertise in our papers are wise, good and honest; reputable physicians do not advertise; *ergo*, reputable physicians are not wise, not good, and not honest. Scarcely a month passes in which every one of the newspapers of this city do not publish, editorially or otherwise, spiteful and malicious articles concerning the medical profession, thus following in the footsteps of a notorious Chicago journalist, sometime deceased, who was known to be insane for years before his death. In regard to the matter of advertising in newspapers, it does not seem to have occurred to the writers to find out why reputable physicians think such advertisements improper, and why they must in the end, be detrimental to the public.

As was said at the outset, the public and the leaders of the public must be educated up to the point of knowing what sanitation and public health mean. But how are they to be taught? One may hire a hall and lecture. By this method, however, only a very small minority of the public are reached. It is through the daily press that the public is best reached. As a rule, however, the daily press will not give space to such information. It does not contain the details of a triple murder, or a scandalous divorce case; it is not "taken from the diary" of some ignorant detective or policeman, that probably never kept a diary; it has no information concerning prize fights and base-ball games; and, a fatal objection, it gives no opportunity for publishing a bad wood-cut of some notorious woman or thief. With these objectionable and even fatal defects, an article on any subject relating to public health is not considered "news" by the *Palladium of our Liberties*.

Some time since the Agricultural Department of Wisconsin University published the results of an elaborate series of experiments on the feeding of

pigs. The publication was sent to a large number of papers, both in this country and England. Not a single paper in North America gave as much as one column to a review of the experiments. An English paper, on the contrary, gave more than a page to the subject.

The newspaper is the best medium for the dissemination of knowledge among all classes because it is cheap. If, on the one hand, one ask the editor of a daily newspaper why he does not print what will teach the public and give it information, he promptly replies that teaching is no part of the business of a newspaper. If, on the other hand, one be asked, what is the great means and medium for instructing the public? he answers, just as promptly and positively: "The daily press."

There are some papers that, at intervals, attempt to discuss scientific matters, sanitary, medical, and others. Just about as often as these attempts are made, however, facts are so misstated and distorted (generally unintentionally) that what is written has no value. It would seem that an editor that had any desire to give facts would have such articles written by men competent to write on these subjects; in which case well-informed men would not be disgusted, and the general public would not be misinformed. This is done to a very large extent in England and on the Continent, and when articles of this kind appear in such papers as the *London Times* they are generally of such a nature as to carry conviction. There is no more important field for a great daily newspaper to work in than that of informing its readers on public health matters.

But how can a newspaper consistently preach public health in its editorial columns, and at the same time sell advertising space to quacks? Long usage and experience shows that consistency is not among the jewels that may be owned by a newspaper. And it may be said that sanitarians should be tolerably well satisfied if the papers would begin to pay some attention to public health matters. As the matter now stands, so soon as any one begins to agitate for sanitary legislation, the public and the newspapers cry out that the doctors want something for themselves. They may be informed, however, that all the doctors ask for themselves is that the public will be more prompt in paying their doctors' bills.

EXTIRPATION OF THE LARYNX.—On February 19 PROFESSOR CACCIOPOLI, of Naples, performed the 13th extirpation of the larynx in Italy—for sarcoma of the larynx.

ŒSOPHAGOTOMY FOR FOREIGN BODIES.

In the *Deutsche Zeitschrift für Chirurgie*, Bd. xxv, S. 565, 1887, GEORG FISCHER, of Hanover, published a list of 80 cases of œsophagotomy for foreign bodies, with remarks on the general indications as to treatment. He has recently (*Deutsche Zeitschrift für Chirurgie*, Bd. xxvii, S. 273, 1888), republished his list, stricken out one case, and added 29 published and unpublished cases, making a total of 108 cases from which to draw conclusions. Of these Germany furnishes 26, Great Britain 20, North America 19, Austria 12, France 10, Italy and Russia 10 each, Denmark 3, Switzerland, Belgium and Holland 2 each, and Spain and Asia 1 each. Of 100 cases 67 were male and 33 female. In 6 cases the foreign bodies stuck in a stricture of the œsophagus, 5 of these in Billroth's clinic, 1 of which was twice operated on (in 1878 and 1885). Between 1738 and 1870, 31 œsophagotomies were performed, and 17 since 1870.

Taking out a case of œsophagotomy in which gastrotony was subsequently performed, with a fatal result, 107 operations give 79 recoveries and 28 deaths, a mortality of 26.16 per cent. A study of the cases as regards the time that elapsed between the impaction of the foreign body and the operation shows that the mortality of operations done during the first two days is about 5 per cent. less than between the third and sixth days (inclusive), and that the mortality of operations done during the first three days is about 15 per cent. less than between the fourth and eighth days (inclusive). Of 70 operations done during the first eight days 27.14 per cent. were fatal; but of 9 between the first and fifth week 22.22 per cent. were fatal; and of 14 done after the lapse of months or years 21.42 were fatal. In regard to the age of the patients, the mortality of 9 operations between the ages of 10 and 20 years was nil; between 20 and 30 (18 cases) 11 per cent.; between 30 and 40 (21 cases) 28 per cent.; between 40 and 50 (12 cases), 40 and 50 (12 cases), and 50 and 60 (6 cases) 33 per cent., and between 60 and 70, 80 per cent. The youngest patient was 11 months old (died). One child of 16 months, 2 of 2 years, and 4 between 3 and 8 years recovered, though 1 had 20 epileptic attacks within 24 hours after the operation. The oldest patients were a woman of 70 (died), and a man of 74 (recovered).

In regard to the nature of the foreign bodies, 34 operations to recover false teeth gave a mortality of 20 per cent.; 33 for impacted bones of various kinds gave 33 per cent. of deaths. Of 7 operations for impacted coins 1 died. All the cases in which fruit

stones (6 cases), needles (5 cases), and fishbones (2) were operated for recovered. Two operations for stones gave 1 death. These were the foreign bodies that indicated the operation more than once.

Fistula after operation occurred in Cheever's first three cases, but the fistulae, caused by reopening of the wound, closed again. Of the fatal cases, 12 were caused by ulceration, perforation, or gangrene, with involvement of the posterior mediastinum, burrowing of pus into the pleura, stomach, and to the base of the skull, and to pneumonia and pulmonary gangrene; 6 deaths were from hæmorrhage, 5 from exhaustion, 1 each from sepsis, pulmonary œdema, tuberculosis, and pulmonary trouble. In regard to the deaths from hæmorrhage (6), in half of them the foreign body wounded an artery, and hæmorrhage took place from the mouth or into the larynx and lungs. No fatal hæmorrhage occurred during an operation. In 3 cases the hæmorrhage occurred during the after-treatment, from unknown cause; in 1 case the ascending cervical artery rupturing on the eighth day, in 1 case presence of a drainage-tube, with the assistance of a 5 per cent. solution of chloride of zinc, caused hæmorrhage from the common jugular, and in 1 case the thyroid cartilage was most probably wounded by the stomach tube. Exhaustion carried off a 3 year old child, 3 patients between 60 and 70 years, and a man that had had a set of teeth in his œsophagus for 12 years. The case of pyæmia occurred in Nussbaum's service in the Munich Hospital in 1868, "when pyæmia was the order of the day."

The indications given by Fischer for the operation are as follows: 1. A recently swallowed foreign body must be removed by œsophagotomy, in case the bloodless method fails up to the end of the day after it was swallowed. Tracheotomy must be performed for threatened asphyxia. 2. If the foreign body has been impacted for some days one trial may be made with the bloodless method, and if this fail œsophagotomy should be performed immediately. 3. If the nature of the foreign body be such that any attempt at extraction or to push it down is dangerous, operate immediately. 4. When infiltration of the neck already exists, or when hæmorrhage has taken place from the mouth, œsophagotomy must be done at once. These indications presuppose that the surgeon sees the patient early. As a rule, however, the patient goes from one physician to another, each one attempting to remove the body, until finally, possibly after the lapse of days, the patient goes to a hospital. Precious time has been lost, the œsophagus has been injured, perhaps

perforated, and the favorable time for operation is past. The physician, should he not wish to operate, should send the patient to a surgeon without making more than one or two attempts to remove the body.

Of the technique of the operation, and of the after-treatment, something may be said. The diagnosis and location of the body may be rendered uncertain by enlarged or softened glands (case of König), or an abnormally large carotid tubercle may cause an error (case of Esmarch). It must be remembered that the body may slip into the stomach during anaesthesia on account of the now relaxed condition of the œsophagus. The body may be too large to remove through the incision; Lawson had to cut a set of teeth in two with bone-forceps in order to remove them. It does not seem advisable, according to Fischer, to lay down any rule in regard to whether the œsophageal wound should be sutured or not. If the suture be used perhaps it is best to use isolated sutures, first used by Colin on animals, and recommended by Terrier. As to feeding the patient, Fischer says: 1. Every patient with a suture in the œsophagus should take fluid food a few hours after the operation, but should not be fed with an œsophageal tube. Exceptions are cases of incomplete and very painful deglutition and extreme exhaustion of the patient. 2. Under the open treatment of the wound the patient should be fed at first by means of a tube carried into the stomach through the wound.

PREVENTION OF DIPHTHERIA.

In complying with the request of a correspondent, in THE JOURNAL for March 31, 1888, we gave as the formula for preventing diphtheria "an abundance of pure air, good water, wholesome food, clean soil and a clean personality." Now we are asked by another highly esteemed correspondent, whose letter can be found in another column, whether we have not "accidentally given the wrong formula." And he suggests as the "correct formula for the prevention of diphtheria . . . isolation and disinfection." In reply, we ask whether our formula was a mistake, or whether our correspondent has mistaken the object for which our formula was given? If the conditions given in our formula actually exist in any community or household, what can our sanitarian find to *isolate* or *disinfect*? The coexistence of the conditions being established, the only thing necessary is to maintain them *in statu quo* by preventing the introduction of infection or cases of infectious disease: as the pres-

ence of either at once destroys the conditions demanded by our formula. But if the air, water or food are allowed to become contaminated by the presence of infectious persons or things the primary question is not one of prevention, but of how to get rid of what already exists? In answering this question, the formula of our correspondent becomes appropriate, *i. e.*, isolate the infectious person and disinfect or purify all the infected surroundings, until the conditions of purity required by the formula for prevention are restored.

MEDICAL GRADUATES IN FRANCE.—From 1882-83 to 1886-87, inclusive, the six diploma-granting faculties of France graduated 3057 students. Bordeaux graduated 378, Lille 76, Lyon 242, Montpellier 338, Nancy 104, and Paris 1919. From 1882-83 the number of graduates steadily diminished from 662 to 546; in 1886-87 the number rose to 624, but in this year 99 diplomas were granted, under the new organization of the *service de santé*, to members of the *corps de santé* of the marine, leaving 525 diplomas granted to actual students of medicine, which is proportional to the diminishing ratio of the preceding sessions.

PRIZES OF THE LOMBARD INSTITUTE.—For 1888: A well demonstrated discovery in the treatment of pellagra, or on the nature of contagious miasms (2500 francs). Memoir to be deposited before December 31. For 1889: 1. History of hypnotism; critical examination of questions relating to it, with personal experiments (1500 francs). To be in hand before April 30, 1889. 2. Original researches on the embryology of the nervous system of mammals (2000 francs). 3. Show some point in the macroscopic and microscopic anatomy of the human brain (2000 francs).

MAL PERFORANT AND SPINA BIFIDA.—Kirmisson published (*Bulletin Medical*, Sept. 7, 1887) a case of perforating ulcer which he ascribed to spina bifida. S. Bonandi (*Gazette degli Ospitali*, March 21, 1888) also publishes a case confirmatory of Kirmisson's case, and concludes that it is at least plausible that the arrest of development of the vertebral column and the dystrophy of the spinal cord is the primary cause of mal perforant in cases of spina bifida; and that these cases support the theory of the nervous origin of the foot anomaly.

LIEBERMEISTER and ERB have both declined the

Chair of Clinical Medicine in Leipzig made vacant by the death of Wagner.

SEVEN AMERICANS attended the chemical laboratory of Prof. Fresenius in Wiesbaden this session, out of a total of 75 students.

A MEDICAL SCHOOL FOR CHINESE was opened in Hong-kong last October.

ASSOCIATION ITEMS.

The following additional titles of papers to be read at the approaching meeting have been received since the programme was published in the issue of THE JOURNAL for April 7:

Section on Practical Medicine.

"The Unity of Tuberculosis," by J. H. Musser, Philadelphia.

"My own Clinical Experience in the Administration of the Iodide of Potassium in the Treatment of Syphilis," by Morris H. Henry, New York.

"Obstinate Hæmaturia and its Treatment," by H. D. Didama, Syracuse.

Section on Obstetrics and Diseases of Women.

"Treatment of Acute Peritonitis," by William H. Myers, Ft. Wayne, Ind.

"The Value of Galvanism as Applied by Apostoli in the Treatment of Fibroid Tumors of the Uterus, with Cases," by Franklin H. Martin, Chicago.

Section on Diseases of Children.

"Membranous Croup and Laryngeal Diphtheria; Are they Identical?" by I. N. Love, St. Louis.

Section on Surgery and Anatomy.

"On the Radical Cure of Varicocele Attended with Redundancy of Scrotum," by Morris H. Henry, New York.

Section on State Medicine.

AMENDED LIST.

At the coming meeting of the American Medical Association at Cincinnati, O., May 8, 9, 10 and 11, papers are expected before the Section on State Medicine, as follows:

FIRST SESSION, TUESDAY, MAY 8.

Address by the Chairman of the Section, "Recent Advances in State Medicine," by Henry B. Baker, Lansing, Mich.

"Should the National Government Defend our Ports Against the Invasion of the National Enemy, Contagious Disease?" by Benjamin Lee, Secretary of the State Board of Health, Philadelphia, Pa.

A paper (title not yet learned) by J. N. McCormack, Secretary of the State Board of Health, Bowling Green, Ky.

"Cremation of Garbage," by J. Berrien Lindsley, Secretary of the State Board of Health, Nashville, Tenn.

"House Drainage," by Joseph Edwards, Philadelphia, Pa.

SECOND SESSION, WEDNESDAY, MAY 9.

A paper (title not yet learned) by E. O. Shespeare, Philadelphia, Pa.

"Personal Prophylaxis Against Malarial Disease," by Geo. H. Rohé, Baltimore, Md.

"Atmospheric Temperature and Intermittent Fever," by Henry B. Baker, Secretary of the State Board of Health, Lansing, Mich.

"Abstract of Laveran's Researches on the Hæmatozoon of Malaria," by S. T. Armstrong, U. S. Marine Hospital Service.

"The Internal Origin of Fevers," by J. A. Larabee, Louisville, Ky.

"Uniform Medical Practice, Report by a Committee of the Association," by Perry H. Millard, Ch'n.

THIRD SESSION, THURSDAY, MAY 10.

"Recent Discoveries and Researches with Regard to a Common Cause of certain Infectious Diseases," by C. W. Chancellor, Secretary of the State Board of Health, Baltimore, Md.

"The Causation of the Essential Fevers," by Victor C. Vaughan, Ann Arbor, Mich.

"Hygiene of Infancy and Childhood," by T. B. Greenley, West Point, Ky.

"Eastern Carolina as a Residence for Tuberculous Patients," by J. M. Baker, Tarboro, N. C.

"The Duty of the State and of the American Medical Association to Consumptives and their Medical Advisers," by J. E. Woodbridge, Youngstown, O.

Each paper should take twenty minutes, and there should be discussion after each paper.

If those who are to contribute papers see any error or omission in the title as here given, they will confer a favor by notifying the Secretary of the Section, S. T. Armstrong, M.D., Marine Hospital Service, New York, or the undersigned,

HENRY B. BAKER,

Chairman of the Section on State Medicine, American Medical Association, Lansing, Mich.

SOCIETY PROCEEDINGS.

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, March 3, 1888.

THE PRESIDENT, Y. H. BOND, M.D., IN THE CHAIR.

DR. I. N. LOVE read a paper on

THE PRACTICAL APPLICATION OF GLYCERINE.

There is no one disturbance that superficially viewed, seems so trivial, and yet which may be the cause, directly or indirectly, of such positive injury to the human anatomy as constipation. In infantile life, and during all ages, particularly among women, it is a prevalent disorder. The number of cases of hæmorrhoids, prolapse of the rectum, fissure and fistula of the anus, not to speak of the cases of fever due to absorption of ptomaines, all traceable to con-

stipation, cannot be computed. Any procedure that promises relief for this dire disturbance should be thoroughly tested, and if efficacious, adopted.

In the *British Medical Journal*, of December 24, 1887, Dr. Julius Althaus reports, with the endorsement of his own experience, a procedure recommended by Anacker for the relief of habitual constipation, viz., the injection by means of a small glass, or hard rubber syringe, of a teaspoonful of glycerine into the rectum. An evacuation of the bowels usually occurs immediately, or within a few minutes.

The rationale of its action given by Anacker is that glycerine, in consequence of its pronounced affinity for water, when placed within the rectum, abstracts moisture from it, causing hyperemia and irritation of the sentient nerves of the rectum, which leads reflexly to active and prompt peristaltic contractions, ending in defecation. The greater the accumulation of fecal matter in the rectum, the more decided the effect. There is no unpleasantness or pain, but the action takes place *cito, tute et jucunde*. Sometimes a little fullness and throbbing is felt in the rectum for a few minutes afterwards.

Althaus expressed the opinion that this plan, on account of its simplicity and readiness would be found to constitute a veritable improvement in the therapeutics of constipation. The simplicity and practical value of the idea impressed me the moment my eye fell upon the article of Althaus, and I demonstrated its value within an hour, and from that time to the present, a period of over six weeks. I have applied it many times daily where the conditions suggested it, and no matter what the age, or degree of constipation, the response has been uniform and prompt. In a large number of infants and mothers where habitual constipation had been present from the birth of the former the remedy produced instantaneous relief, and coupled with broken doses of the mild chloride to stimulate the secretory system, I believe it furnishes a key to unlock the constipated condition which can be depended upon. I have directed the use of the glycerine injection at a definite hour each day, and have succeeded in establishing regularity in almost every instance.

There is no question about the securement of an evacuation almost immediately after the glycerine injection. The main point in order to obtain a result that will be lasting in character is to impress the patient or attendant with the importance of giving the injection at a certain time each day. In a few cases of piles and severe rectal irritation accompanying constipation, both conditions were more satisfactorily relieved by the glycerine than they had been previously by purgatives and sedative ointments. This remedy is a valuable one in being efficient, simple and convenient. It is surprising that some one had not thought of and applied it before.

Apropos to this subject, Dr. Edward R. Mayer, of Wilkesbarre, Pennsylvania, reports in the *Medical News*, of February 25, the use of an injection of two fluid ounces of warmed glycerine through a large flexible rectal tube, inserted at least seven inches, for the relief of intestinal obstruction due to paraly-

sis of the muscular coat of the bowel, superinduced and accompanied by peritonitis. All other means for securing an evacuation of the bowel having failed, Dr. Mayer having been uniformly successful in the application of the Anacker-Althaus plan of using glycerine, it suddenly occurred to him to extend and amplify the method as above stated. The insertion and the injection produced no distress or immediate effect, and he left the invalid with directions to her nurse to cause the hips and knees to be elevated for a time. Upon his return after several hours, he found a greatly changed condition of affairs, comfort where their had been agony, and an anxious and pallid countenance replaced by beaming smiles and hopeful expression.

He was informed that within ten minutes after the administration of the glycerine enema, the patient felt a warm thrill and glow extending itself and permeating all through her intestines, followed by the vermicular movements which precede peristalsis, by audible and sensible displacements of gas, and finally by acute colicky pains. Within twenty minutes after the injection, there was an urgent call to stool, with the result of the escape of a large amount of flatus, and later, of a pint of semi-liquid evacuation of mingled yellow and green color, with some small scybala and a very pronounced odor. This evacuation was succeeded in an hour by another of a similar character. Considerable tympanites and tenderness still existed, but the abdominal distention was decidedly reduced, and the distress greatly relieved. The temperature, which had been kept depressed to about 100° by the antipyrin, soon fell to 99°, and the thready, jerking pulse of 120 had descended to 100, and the next day was not above 90, becoming rapidly soft and full. The nausea abated, and in a few hours disappeared and did not return.

Enemata of warmed glycerine to the extent of two ounces each, were now administered night and morning during the next three days, each one resulting in a copious fecal evacuation, at first liquid, and then formed. The temperature varied during several days between 99° and 99.6°, the pulse soon dropped to 80, the tenderness gradually disappeared, and the distention slowly melted away. Milk punch, beef-tea, and revalenta arabica were greedily taken in small quantities, retained and digested, and upon the ninth day of the illness, the patient, while feeble, was entirely convalescent, a salutary diarrhoea having set in after the enemata were discontinued, and soon ceasing. The only drug treatment employed after the symptoms improved, was a single very small dose of a saline laxative and a nightly hypodermatic of six minims of morphia solution, to secure rest.

The result in this case was extremely satisfactory, and very important in its suggestion of possibilities.

Dr. Mayer further says: "If glycerine, injected by the method described, does really penetrate and permeate the upper colon or even the small intestine, it remains to be ascertained whether drugs combined with it as their vehicle, would measurably remain in the site to which they would be conveyed, or would be too completely washed away and ex-

truded by the pouring out of large quantities of liquid, and by the violent expulsive efforts of the muscular coat of the intestines to exert their specified influence. Should it be that any considerable portions of such drugs would remain *in situ*, it is manifest that an improved method of internal medication is near at hand, and that such drugs as anti-febrin, antipyrin, aloin, belladonna, calomel, croton oil, colocynth, ergotin, hydrastia, hamamelin, naphthalin, physostigma, the terebinthates, and even nitrate of silver, and some of the germicides may be introduced by an entrance into portals hitherto closed to them excepting by a devious journey through the ordinary avenues. He would be a rash man who, with our present knowledge, should attempt to sterilize typhoid bacteria by a direct attack upon the agminate glands, but stranger things than this have happened, particularly of late, in the direction of gaseous rectal medication."

DR. ROBERT BARCLAY: I am glad to hear the doctor's testimony added to that which already exists as to the efficiency of glycerine as an aperient. He speaks of its use by rectal injection, which to my mind is a very disagreeable method of administering it, except in the case of helpless patients, where there are large fecal accumulations, or in very young infants. The aperient properties of glycerine have been known for years; it has been in use as an adjuvant to other aperients. It has been my custom to prescribe castor oil and glycerine, in equal parts—an ounce of each—with a few drops of oil of wintergreen added to give a pleasant flavor. This often has a good effect where castor oil alone will not answer. I give it by the mouth and not by the rectum. It is just as well to give it in an agreeable way and by the natural passage.

DR. DEAN: I had occasion to treat some cases of oxyuris vermicularis, and I used glycerine with good effect. I related this to Dr. Hermann, of this city, and sometime afterward he brought me two children who were troubled with oxyuris vermicularis, they were little girls, and the worms had gotten into the vagina, which is frequently the case. And he used glycerine in these cases with good effect. I advised him to be careful in the use of glycerine, however, but he got an excellent result. I have often seen the good result of the use of glycerine injected into the rectum of children for this trouble. The worms shrink and shrivel up, and it is only a few minutes until the bowels are emptied of the worms. The astonishing feature to me is that the beneficial effect of glycerine in the condition mentioned by Dr. Love has not been discovered before. I have for many years used glycerine injections for these worms that I have mentioned, but it is only within a few days that I saw this use of glycerine in constipation suggested.

DR. FRANK GLASGOW: Some years ago I read an account of a series of experiments which had been instituted by some Frenchman, who made various applications of medicine to the surface of the body for the purpose of determining whether they would be absorbed or not. He found that remedies in glycerine solution were not taken up.

into the blood. This is probably because there is an exosmosis going on, of the watery particles of the blood, to the glycerine. It occurred to me that this was the same process which caused the result, which Dr. Love mentions; and if so it seems to me it would render inoperative the use of glycerine *per rectum* as a vehicle for the conveyance of systemic remedies.

DR. LOVE: The suggestion which Dr. Glasgow has made is a very good one, and it is probable that the use of glycerine for the purpose suggested by Dr. Meyer would be contra-indicated. I want to say that Dr. Barclay failed to grasp the main idea in the paper; that is that the glycerine by injection on account of its affinity for water produces an irritation of the sentient nerves followed by a peristalsis, and this secures a prompt action, the impulse being given from below upward securing a prompt effect. The administration of glycerine by the mouth has no bearing on the subject whatever.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, December 7, 1887.

THE PRESIDENT, JOS. TAHER JOHNSON, M.D.,
IN THE CHAIR.

DR. P. J. MURPHY read the history of and presented the specimen of a case of

HYDATIDIFORM MOLE.

Mamie H., colored, æt. 18, single, first applied at Columbia Hospital Dispensary for, as she expressed it, "womb disease," Feb. 9, 1886. She began menstruating at 13 years and for the following two years she had no difficulty with the flow. She then became irregular, being unwell two or three times a month, and again seeing nothing for six or seven weeks. She suffered intense pain at every menstrual epoch and usually the flow was profuse. Now has a great deal of pain in back and a feeling as if her insides were coming out below. She has a profuse leucorrhœa, otherwise feels all right. At the request of her accompanying relative and herself an examination was made. The vagina was found to be quite capacious and the uterus was of about normal size. There was marked retroversion and retroflexion of the uterus and its cervix was close under the pubes; the anterior fornix of the vagina was obliterated. She continued about the same, working in the capacity of household servant, and was admitted to the hospital June 22, following. The uterus was now found enlarged, slightly, and prolapsed; posterior lip of cervix elongated and anterior lip occupied by a hard mass about the size of a hickory nut. July 7, after some paroxysms of pain she passed off "something" that upon examination proved to be a fetus of about 5 weeks development. She was discharged from the hospital August 24, feeling excellent. She was not again seen until she presented herself again at the outdoor service of the hospital, August 9, 1887, complaining of considerable nausea and vomiting, constipation, loss

of appetite, and very much worried about her "courses." She had been irregular and profuse during the spring, had been unwell three times in June and had not seen anything in July. At this visit her breasts were swollen, deeply pigmented about the nipples and presented to view many of the enlarged papillæ known as Montgomery's tubercles. The uterus was very much enlarged, extending about half way up to the umbilicus, and was quite soft. Knowing her previous history, pregnancy was suspected. October 14 she again returned and stated she had been confined to bed, had been unwell three weeks, and was still flowing. She was requested to keep quiet in bed and was given 20 grains of potassium bromide three times a day. November 1st, presented herself, saying she had been unwell three days and was in a bad way. Abortion was suspected, and an examination made. A mass of hydatidiform cysts was found protruding from the vulva and extending into the uterine cavity. As much of it was removed as possible without entering the cavity of the uterus. The patient was readmitted to hospital, put in bed, and given a hot carbolized douche. Some slight hæmorrhage with passage of shreds occurred for two or three days, and she was given 25 drops of aromatic sulphuric acid three times a day. November 6 she was etherized for examination. There was marked resonance on percussion all over abdomen; uterus not felt above pubes by external manipulation. Cervix uteri small; uterus enlarged and thrown forwards, and its cavity measured four inches in length; some slight bloody discharge; the growth in the anterior wall of the cervix was still prominent; the index finger passed into the cervix as far as the internal os. She was given pil. ergotin comp. (Schieffelin), one three times a day. November 19, uterus about normal size and condition; patient felt well and was discharged from hospital.

She declared she had not had sexual intercourse since the date of her first admission to the hospital, June, 1886. This declaration may be false, yet it is possible it was true.

DR. T. C. SMITH: Dr. Murphy's specimen is interesting. It will be remembered that he presented a specimen and read the histories of two cases some time ago. The interesting point is whether the hydatid degeneration developed at the time of the pregnancy in 1886. The woman may abort one of a twin pregnancy and retain the other in a degenerated state. In such cases the question of chastity is at stake, and hence the importance of being careful in the expression of an opinion.

DR. D. S. LAMB read the history and presented the specimen of a case of

SENILE HYDROCEPHALUS.

(This paper will be published April 21.)

DR. ROBERT REYBURN read a paper on

ELECTRICITY IN SURGERY.

(See page 455.)

DR. FRIEDRICH: How long does it take to cure a tumor?

DR. REYBURN: One or two applications are made a week and the sittings are about ten minutes each.

DR. LAMB: Do the tumors always atrophy, or do they ever slough?

DR. REYBURN: The current decomposes the tumor.

DR. LAMB: In the case of the tumor of the neck would it not have been more satisfactory to have used the knife?

DR. REYBURN: The patient refused to submit to its removal with the knife. It was about the size of a small pear. His experience with the knife has been very poor, as such tumors are apt to return.

DR. LINCOLN was glad that this subject had been brought before the Society, as he had been greatly interested in it for some years, and during the past year has been employing it daily. His results have warranted its application in a variety of pathological conditions, and in some instances have been simply marvellous. In October, 1886, he was called to see a case of uterine fibroid of most formidable dimensions, in consultation with Dr. Bayne and the President of this Society. The patient, a lady from Florida, had been suffering from the tumor for several years, and for eighteen months had been rendered almost helpless by its enormous bulk, which rendered it impossible for her to put on her own shoes and stockings. The tumor filled the abdomen, reaching to the xiphoid cartilage, and she was as large as a pregnant woman at term. The whole length of the ordinary sound was lost in the uterine cavity. By an almost constant hemorrhage she was reduced to an extreme degree of emaciation. It was unanimously agreed that operative procedures were out of the question, and the proposition by him to try the effect of electricity was accepted, and after weeks, during which hypodermatic injections of ergot were almost daily used, with the effect of diminishing the hemorrhage, but not perceptibly reducing the bulk of the tumor, he applied the electric current. A Fleming battery of 40 cells was used. The positive needle, insulated to one inch from the point, was introduced through the abdominal walls at a point one inch below the umbilicus, so as to penetrate the tumor to the depth of three or four inches, while the negative needle was introduced through the vagina. The whole strength of the battery was gradually brought to bear, and continued for twenty minutes without any considerable pain. The introduction of the needle was not more painful than that of the ordinary hypodermatic needle, and no anæsthetic was used. The first application was, then, attended with no pain; it immediately arrested a copious hemorrhage, excited by the introduction of the speculum; relieved a severe pain in the back which had existed for a long time; and produced in a high degree the usual sense of exhilaration and courage. Two similar applications were made subsequently at intervals of a week and ten days respectively, the needle being entered through the abdominal walls about an inch below that on the previous occasion.

The tumor, which was of great hardness, and with difficulty penetrated by the needle, was greatly softened by the first application. Subsequently in three or four applications a large electrode, 12 by 9 inches,

was substituted for the positive needle. This gave more pain and was less efficient. After the first application, though the negative pole was used through the vagina, there was no more hæmorrhage, menstruation becoming normal in regard to time and amount. The circumference of the abdomen was in a few weeks reduced by four and a half inches; the tumor sunk to the level of and a little below the umbilicus, and was apparently not more than one-fourth its former bulk. The patient now feeling almost entirely relieved of her disabilities, became anxious to return to her family in Florida, and she soon after did. Since her departure she has continued well, and is as actively engaged in her domestic duties as ever.

Electricity often has a very exhilarating and tonic as well as an anodyne influence upon the nervous system. That may occur in cases where no local changes for the better can be hoped for *e. g.* in malignant disease.

Some 12 or 15 years ago, about the time Netfel reported several cases of cure of cancer, a woman was assisted into his office in the last stages of cancerous cachexia, from a scirrhus of the breast. He was at the moment using a Graves' battery of 60 cells in a couple of cases of progressive muscular atrophy, and the temptation to try its effects upon this otherwise hopeless case was great. Two needles connected with each pole of the battery were introduced into the opposite sides of the scirrhus mass, and a current from 40 cells—probably, as the battery was a very powerful one, of an electro-motor force of 200 milliamperes—was continued for twenty minutes. Locally extensive sloughs were formed about the needles, the pain which had been intense was dissipated, and the progress of the disease was apparently arrested for two weeks. The next morning the poor woman, who the day before had been unable to walk except with assistance, met him at her door, busily occupied with her broom, and informed him that she was well. This condition of relief from suffering, renewed appetite and increased strength continued for some weeks when the patient again came for another application, which was given with a similar but less marked effect; but after this she gradually declined, suffering but little pain, until her death.

About the same time he treated a large recurrent sarcoma of the breast in the same way with the result of relieving entirely the pain, apparent arrest of the growth (previously rapid) for considerable time, when resort was had to cunderango by the patient who unfortunately died just before a cure by that agent was effected.

He has employed electricity in a large number of cases of chronic metritic and peri-metritic inflammation, accompanied with adhesions and exudations, with the best results. Neoplasms rapidly melt away under its use and pain is, for the time at least, almost instantly abolished. Indeed this wonderful relief from suffering through its agency is regretted by Engelmann as the patient is tempted thereby to believe herself cured before the essential organic restoration is accomplished.

Of course, electricity like all other valuable agents

will be used by enthusiasts when it is quite out of place. He remembers that the late Secretary of the Smithsonian Institution placed in his hands for review some years ago, a French journal in which a most ardent and sanguine Frenchman advocated the amputation of large limbs by the electro-cautery.

In suitable cases and with a competent knowledge of its nature and proper application, no one will fail to find electricity of inestimable advantage. The surgeon will find abundant occupation for his knife for ages yet to come, but many a man and many more women will have occasion to thank God for an escape from that last resort of an incompetent profession through the benign agency of this wonderful force. He would insist that all who propose to employ electricity should first learn something about it. With the works of Erb, Apostoli, Bartholow and the most elaborate and excellent paper of Engelmann in the Transactions of the American Gynecological Society at hand, there is no reason for ignorance on the subject. He would further insist on the importance of the use of the milliamperè meter. The resistance of the tissues, particularly of the cuticle, varies so constantly that the meter is absolutely essential to the proper use of the current.

In conclusion he would say, without fear of contradiction, that no one who has ever intelligently employed this agent will ever abandon it, and that distrust of it exists only among those who have had no experience of its marvellous powers.

DR. J. FORD THOMPSON said he felt as if he had lost his occupation and that there was now no use for the surgeon. As this was a surgical question he had something to say. Such methods are apt to be carried to extremes. One should not base his reputation on the cure of fibroid tumors of the uterus for they not infrequently get well without any treatment. A new treatment springs up and a few enthusiasts claim to cure all cases. At one times ergot was used for the radical cure, and for a time a great many physicians were running over with it, but its time was short. He had frequently seen these tumors get well after treatment had been suspended. In one case the woman was so large that she was confined to the bed and compelled to lie upon her back. She had had electricity, and he was called in to decide about an operation. He declined to operate and she got better without any treatment. How many malignant tumors are reported on good authority as being cured by electricity? He had never seen such a case in his practice. Sometime ago he was called to see a case of cancer of the breast that had been under the care of a specialist who had been applying electricity to it. He was summoned in great haste and found the woman bleeding to death. The breast was filled with a blood-clot; the skin had ruptured; and there was a fungus growth. He amputated the breast at once. Everything between the skin and the ribs was a mass of pulp resembling clotted blood and the arteries had ruptured. This was an extreme case with the intense application of electricity, but it did not get well until its removal.

Dr. Reyburn turned the goitre away. Such growths are not cystic, and do not require any such

treatment; in fact they often do better when left alone. He never operates in the condition, to which Dr. Reyburn refers. He thought electricity an agent for good, but it is too apt to be abused by enthusiasts. A few cases of stricture of the rectum, treated by Newman, of New York, is worthy of mention. Dr. Thompson diagnosed cancer of the rectum in a student of medicine. Drs. Agnew and Sands agreed with his diagnosis. He then went to St. Luke's Hospital, in New York City, where a young physician cut the stricture. The patient stayed in the hospital until the wound healed and then went to Boston where he was under treatment for sometime. He was almost insane and was sent to his mother in a deplorable condition. He heard of Dr. Newman and determined to try his treatment. Dr. N. applied electricity for several months. In about eight months a stout, healthy-looking man entered Dr. T.'s office but was not recognized. He said Dr. N. could introduce an electrode as large as a hen's egg. The rectum was dilated and there was a ring of hard tissue present, but the man was apparently healthy. He does not believe that this man has been cured but he is practically well and may live a useful life for many years. In large hospitals such cases are surgical curiosities.

Finally, he is willing to wait a little longer before he accepts electricity as a universal panacea.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

THE VICE-PRESIDENT, W. W. KEEN, M.D., IN THE CHAIR.

Stated Meeting, March 14, 1888.

DR. J. MADISON TAYLOR read a paper on

THE EARLY RECOGNITION OF GRAVES' DISEASE.

(See page 452.)

DR. S. D. RISLEY: I would like to ask Dr. Taylor whether there is any indication by which the development of exophthalmos can be expected in cases in which it has not yet appeared.

DR. J. B. ROBERTS: I believe that the great ocular deformity which is so unpleasant to the patient, and attracts so much attention, can be remedied by a very simple operation: merely putting a stitch at the outer canthus, after freshening the edges of the lids, to diminish the optic commissure after the case has made such progress that it is reasonably certain there is to be no further diminution of the prominence of the eyeballs. The patient can be made more comfortable and less conspicuous.

DR. EDWARD JACKSON: The procedure suggested by Dr. Roberts might be resorted to for other than cosmetic reasons. I recently saw a case of this disease, with very great exophthalmos, in which one eye had been lost through sloughing of the cornea due to exposure; and I afterward learned that the second eye had been lost in the same way. Such an accident might be prevented by narrowing the fissure of the lids.

DR. A. V. MEIGS: I know of one person who has completely recovered from this disease, a woman who had a very severe attack many years ago, under the care of my father. The prominence of the eyes, which was very great, is now hardly noticeable, and yet no operation was ever done. I do not think much would be gained by sewing up the canthus, for while the disease is in its acute stage, it is hardly likely the operation would afford much relief, and later, if the patient recovers at all, the difficulty cures itself. I think I know the case Dr. Roberts had in his mind when he spoke, and Dr. de Schweinitz, who has seen the woman in question, will probably agree with me that nothing would be gained by an operation. One thing I have learned of recent years, and it is that it is not necessary in all cases to put the patient in bed. I could mention three or four cases I have successfully treated with tonics and proper regimen, without its becoming necessary to have rest in bed; the cases, to be sure, were not severe. Dr. Taylor speaks of the early recognition of the disease. For my own part, I do not see how a positive diagnosis can be made until we have at least two of the features of the disease present, namely, the cardiac palpitation and some thyroid enlargement; the prominence of the eyes occasionally does not manifest itself, but a diagnosis can undoubtedly be made in its absence.

DR. G. E. DE SCHWEINITZ: I have examined the case that Dr. Meigs refers to, and I saw nothing to be gained by surgery. The eyes were at first very prominent, but they were then receding, and now the normal relation of lids to eye-balls is restored. Inasmuch as there was considerable myopia, and hence not uncommon prominence of myopic eyes to begin with, they will always be more or less conspicuous.

DR. S. SOLIS-COHEN: I have been extremely interested in this valuable paper of Dr. Taylor's, the more so that I think I recognize in his first case a patient whom I have seen, but in whom I did not recognize this disease. She was treated at the Jefferson Hospital some three years ago for anemia, and was apparently cured. A year ago she returned with the history of "fits" spoken of by Dr. Taylor, and was irregular in attendance and unreliable in statement; the hysterical element so noticeable, probably preventing the careful investigation the case should have received. I consider it the more remarkable that thyroid enlargement should have escaped notice at the clinic in this case, as the comparatively frequent discovery of it at one time, in cases of cardiac and vaso-motor disturbance, has put all the clinical assistants on the lookout for the phenomenon. I can thoroughly agree with Dr. Taylor that vaso-motor paresis plays an important part in the development, if not in the genesis, of this disease. The only case I have seen in the male subject occurred in a young man subject to frequent attacks of flushing of the face, sometimes accompanied with high temperature, in whom the rapidity of the heart's action had led to a diagnosis of hypertrophy of the heart, not warranted by physical exploration. The eyes were not involved

at the last time I saw the patient, nor was thyroid enlargement sufficient to attract attention without special examination. I have now under my care in private practice a young lady not at all hysterical, subject to similar attacks of flushing which sometimes leave behind for a short time wheals like those of urticaria: who has also had two attacks of sudden transient blindness, after which all that could be detected in the fundus was moderate congestion; and whose cardiac action, rapid and irregular at these times is at other times perfectly normal. No organic lesion of any kind has been detected either by me or by more competent observers. It is possible that this may be an early stage of Graves' disease. Improvement has taken place under minute doses of picrotoxin, a drug which Dr. Bartholow has prescribed in cases of exophthalmic goitre, at the hospital, with very good results. One case especially I recall which was associated with purpura. I would like to know whether Dr. Taylor has met with this association. A very interesting case of acute exophthalmic goitre presented at the clinic, which Dr. C. J. Wilson may remember as the subject of one of his clinical lectures; an anemic young girl affected from childhood with nystagmus, in whom goitre and exophthalmos were asserted to have developed within a short time after a fall from a ladder. She was unable to button her collar, which friends had opened in attending to her after the accident.

DR. J. C. WILSON recalled the case mentioned by Dr. Cohen, but not with sufficient distinctness to add anything of importance to the account already given. Dr. Wilson briefly narrated two cases of Graves' disease, recently seen in his private practice, in which the symptoms developed rapidly after mental shock. The patients were young women. The first, a servant, aged 24, of previous good character, was engaged to be married to a young man who was by occupation the driver of an ice cart. Within a day or two of a visit to her, he was accidentally killed, and her first knowledge of his death came through the newspapers. Cardiac overaction at once developed, and within a month thyroid enlargement, and slight exophthalmos. Under rest and large doses of Fowler's solution complete recovery took place in a year. The second case was that of a lady, aged 20, who rapidly developed the characteristic symptoms of Graves' disease after the shock and grief occasioned by the disappearance of a near and loved relative, and the discovery that he was a defaulter to a very large extent. The prominence of the eye-balls was in this case very slight; the other symptoms were characteristic. Under treatment by rest and arsenic decided improvement took place. It is now a month since she last reported.

DR. TAYLOR: In reply to Dr. Risley's query, Does any sign clearly foreshadow the exophthalmos? I can only say that I know of none, nor did I see anything in the literature of the subject to aid us. It usually marks the height of the disorder, though this may be the first feature noticed, especially when it arises suddenly as from shock or overwrought emotion.

DR. CHARLES B. NANCREDE read a paper on
THE IMPORTANCE OF PRIMARY SUTURE OF DIVIDED
NERVES.

(See THE JOURNAL of April 7, p. 427.)

DR. H. R. WHARTON: I have seen one or two cases of primary nerve-suture, though none in which the injuries were so extensive as in this interesting case of Dr. Nancrede's. The results in these cases were good. There is another point to be considered: Shall we attempt secondary suture of the nerves when this has been omitted in the first place? I am very decidedly of the opinion that this procedure should be adopted, for a number of cases have been reported of this character in which the results have been, at least, good enough to make me feel that secondary suture should be attempted when there is any probability of restoration of the use of the injured part. I thoroughly agree with Dr. Nancrede as to the great importance of this subject.

DR. JOHN B. ROBERTS: The only case of nerve-suture I remember at present is one in my wards, in which the work had very properly been done by the resident immediately on the admission of the patient. It was a rather extensive incised wound of the leg, involving, I think, the musculo-cutaneous and anterior tibial nerves. The muscles and nerves were sutured and dressed antiseptically, and the results were good; though I did not follow the case after discharge so as to make an accurate report as to sensation. Dr. Nancrede has incidentally touched upon a point of great importance, that of teno-suture. It has been my misfortune to meet with quite a number of cases in which this had been neglected by the attendant called at the time of the accident. One of these recently seen was that of a man wounded in the forearm just above the wrist, and in the ring finger. There was loss of flexion of the finger, but it was hard to tell which of the wounds to reopen in order to come upon and suture the divided tendon. The family physician believed it to be the wrist; but after cutting down, I found the tendon here flaccid and intact. I then opened the finger-wound, and here found the tendon retracted into the sheath. I sutured, but did not get a good result, probably from the extent of dissection necessary to get at the tendon in the sheath, and the great mass of cicatricial tissue. However, I never hesitate to reopen healed or partially healed wounds to suture tendons when this very important measure has been neglected.

I have been glad to hear Dr. Nancrede say that with cleanliness of person and of instruments asepsis can be secured without chemical solutions. This is in marked contrast to one of my friends, a surgeon of prominence, who thinks that the employment of solutions renders care as to cleanliness unnecessary.

DR. J. WILLIAM WHITE: I do not know whether Dr. Nancrede spoke of the resection of the crushed and bruised ends of the nerves. The general principles of nerve suture are admitted by all surgeons, but the question of resecting lacerated or contused ends before suturing, or of allowing them to remain, is one that should be carefully considered in each case. On the one hand, by resection of any consid-

erable portion we increase longitudinal tension, and make greater strain on the sutures; on the other, we run the risk of including in the stitches tissue too much damaged to recover itself. There is some difference of opinion as to the particular suture to be employed. I should think that the one proposed by Dr. Nancrede, as shown in his diagram, would be open to objection if, as there apparently represented, it interposes a foreign substance, the catgut thread, between the ends of the nerve; this, if not absorbed, as is sometimes the case even with the best catgut, is liable to be a constant source of irritation, and to prevent union. I prefer and employ a suture passing quite through the nerve above and below the point of union. Evidence, either clinical, or pathological, or experimental, as to the relative advantages of different sutures is desirable, but I do not know of any, and I did not understand Dr. Nancrede to say that there was such evidence.

THE CHAIRMAN: There are two cases I may briefly cite from my own experience in connection with the subject of our discussion:

1. A case of primary nerve-suture in a boy 2 years of age, with perfect recovery of motion and sensation. The case occurred ten years ago. The child, carrying a glass bottle, fell, and a fragment of glass divided the ulnar nerve and artery about $1\frac{1}{2}$ inch above the wrist. The mother made compression with her thumb until I arrived, very soon after the accident. After ligaturing the artery, I examined the nerve and found that it had been divided. I had only my pocket-case containing coarse white silk and an ordinary needle. Not wishing to leave the coarse silk in the wound, particularly not in the nerve tissues, I debated as to the method of suture, and devised one which proved eminently satisfactory. Drawing the ends together closely with forceps, I passed a surgical pin obliquely through the two divisions, threw a loop of silk around the point of the pin (as in Simpson's method of acupressure), drew out the thread, passed it around the head of the pin, where it was secured. At the end of forty-eight hours the pin was removed. The thread was thus loosened and removed. Perfect union of the wound took place in a few days. There was no wasting of muscles, and motion was present after twenty-four hours. While the age of the child prevented exact observations as to the time at which sensation returned, at the end of forty-eight hours there was an exclamation of pain on pricking the little finger with a pin. I saw the father of the boy about a year ago, who told me that his son had perfect use of hand and fingers.

2. Extensive teno-suture with quick union. A recent case shows the value of even a brief suture of tendons. A man 25 years of age was admitted into St. Mary's Hospital with complete severance of all the tendons of the forearm and of the sheath above the wrist. The resident sewed each tendon carefully. He had only Kocher catgut, which does not remain more than three to five days, and then closed the external wound and placed the hand in flexion on a splint. The man left without permission after a few days, and it seems removed the splint and

tore out the sutures in the skin. He returned later with a gaping wound in the forearm, but on testing the fingers separately each finger and each joint was found to have perfect motion, showing that even this temporary apposition of the divided tendons had a perfect result. I should prefer for the purpose, however, either very fine silk or, better, the ordinary chlorinized catgut.

DR. NANCREDE: Dr. White has misunderstood me. There is nothing between the divided ends of the nerve. If he will examine the rough model which I pass around he will see that the nerve is securely and accurately coaptated by the suture. I have no distinct recollection of resecting the injured ends in this case; in fact, I am nearly certain that I did not. In some cases I have said it *might* be desirable, but I am dubious about it. In two other cases that I recall at this moment, I remember that I did not make any attempt of the kind, but brought the ends together as best I could. Referring to the incidental discussion, I am glad to hear that so many of our members always suture tendons. I make it a rule to suture nerves and tendons in every case, and generally obtain fair results.

DR. HOWARD F. HANSELL presented a

CASE OF ECTOPIA LENTIS.

Clarence P., æt. 10. This colored boy presents several deformities: A peculiar shape of head, deviation of spine, anterior curve of each tibia, and is more or less undeveloped. I have asked him to present himself before the Society in order that those members who may be interested may have an opportunity to see a case of "ectopia lentis," congenital upward displacement of each lens. The margins of the clear lenses may be distinctly seen about the centre of each pupil. The right lens is dislocated upward, the left upward and outward. Each eye is highly myopic—*i. e.*, as seen through the lens, and hypermetropic as seen under the lens. The temporal side of each nerve shows a large patch of atrophic choroid—post-staphyloma. There is no coloboma of the iris or choroid. With the right eye the boy can read large print only when held $2\frac{1}{2}$ inches from the eye in an upward and outward position. The left eye is useless.

NEW INSTRUMENTS.

TRACHEOTOMY RESPIRATOR.

BY THOS. F. RUMBOLD, M.D.,
OF ST. LOUIS.

On February 21, 1870, with the assistance of Dr. Wm. Neihaus, of this city, I performed tracheotomy on Mr. Wm. D., æt. 43 years. Immediately after he was placed in bed I had a large sponge, that was squeezed out of quite warm water, laid over the tracheal tube. This warmed and moistened the air as it entered the lungs, thus preventing the necessity of having the air in the room unduly heated and moistened, which is usually found beneficial in

tracheotomy cases. While he was in the house he had the hot moist sponge on his neck all the time. In eight days he was strong enough to drive to his place of business, but was prevented by his inability to keep the sponge warm. As soon as he went outdoors and the sponge became cold the cold air produced an excessive cough and some pain in his lungs.

For the purpose of allowing him to have warm moist air all the time, and also to allow him to blow his nose—which gave him a great deal of trouble and much discomfort because of the presence of profuse nasal secretion—I connected the tracheal tube with a rubber tube, which he placed in his mouth. In this way the air from his lungs passed through his mouth, up behind the soft palate and out his nose. This enabled him to blow his nose as perfectly as he had ever done. During inspiration the air passed through his nostrils, mouth and rubber tube into his lungs through the tracheal tube, thus giving it nearly the normal degree of warmth and moisture.



Figure 1. Illustrating the application of an apparatus for conducting the warm and moist air from the mouth and nasal passages to the lungs in cases of tracheotomy. *a*, tracheal tube in place; *b*, short rubber tube connecting the tracheal tube with the secretion-trap; *c*, secretion-trap, to catch the muco-purulent secretion that is coughed from the lungs, and the condensed vapor from the mouth; *d*, soft rubber tube connecting the mouth with the trap and tracheal tube. In the trap *e* is a small bag of pulverized charcoal to deodorize the secretions.

It was found after a short trial that the muco-purulent secretion from the lungs, and the condensation of the moist air from the mouth and nose, as well as some saliva from the mouth, accumulated in the rubber tube, which when they passed into the trachea caused intense spasmodic coughing. For a few days he partially prevented this by clearing the rubber tube after taking it out of his mouth, by coughing through it rather forcibly. As it was quite difficult to cleanse the rubber tube of the muco-purulent secretion in this way I had a glass receptacle attached to the tracheal tube and the tube going to his mouth, so that the secretions were prevented from entering the tracheal tube.

I have called the apparatus a "Tracheotomy Res-

pirator." I have applied the same kind of an apparatus to other patients upon whom I have performed tracheotomy. In one case of malignant disease of the larynx, the patient's breath through the tube produced an intolerable taste. For the purpose of correcting this I put a small quantity of pulverized charcoal, tied in a small bag, into the glass portion, or what might be called the secretion-trap. This has a partially good effect.

Figure 1 illustrated the application of the apparatus. Figure 2 a section of the secretion-trap of the apparatus.

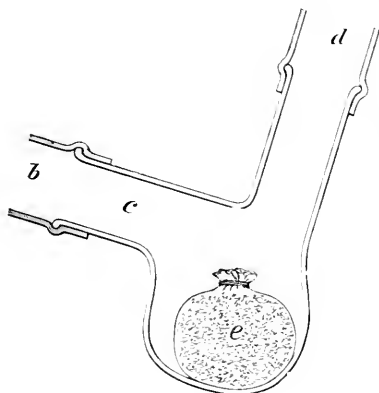


Figure 2, a section of the secretion-trap of the Tracheotomy Respirator. *b*, short rubber tube connecting with the tracheal tube; *c*, the secretion-trap; *d*, the soft rubber tube, which is about 7 inches long, that passes to the patient's mouth; *e*, a small bag of pulverized charcoal.

DOMESTIC CORRESPONDENCE

PREVENTION OF DIPHTHERIA.

Dear Sir:—On page 397 of THE JOURNAL, March 31, is a "formula for the prevention of diphtheria," which is: "an abundance of pure air, good water, wholesome food, clean soil and a clean personality." Have you not accidentally given the wrong formula? Very extensive observation of statistical and other reports on this subject seems to show that diphtheria is about as prevalent among those who employ this formula as among those who do not; while the statistics are conclusive in proving that under another formula the disease is preventable. On page 489 of THE JOURNAL, Oct. 15, 1887, is a diagram, which shows that in 102 outbreaks of diphtheria in which isolation or disinfection or both were neglected, there was an average of a little over sixteen cases and three deaths to the outbreak, that during the same time in 116 outbreaks in which isolation and disinfection were both enforced, there were only about one-fifth as many cases and deaths, which seems to prove that there was a saving of about four-fifths of the cases and deaths by thorough isola-

tion and disinfection. The correct formula for the prevention of diphtheria would seem to be *isolation and disinfection*. Very respectfully,

HENRY B. BAKER, M.D.

Lansing, Mich., April 2, 1888.

A CORRECTION.

Dear Sir:—By some unintentional error, I find the article on "Methods of Examination of Bacteria for Laboratory Purposes" in Vol. X, No. 13, (March 31, 1888), ascribed to me, whereas the author is George W. Nash, M.D., of Boston.

Very truly,

SAMUEL N. NELSON, M.D.

Boston, April 4, 1888.

STATE MEDICINE.

SANITARY PRECAUTIONS IN PENNSYLVANIA.

To all Local Boards of Health and Borough Councils in Pennsylvania:—This Board has received official information since the first of the year of the existence of small-pox in nine States of the Union. Two outbreaks have occurred in this State. The State Board of Health of California has declared it epidemic in that State.

It is raging with great virulence in the neighboring island of Cuba, where sanitary precautions appear to be extremely lax, and with which we are in constant communication. It has prevailed extensively during all the past winter in portions of Great Britain.

In the neighboring State of Delaware cases exist, and several deaths have occurred as the result of the importation of infected rags. This Board therefore deems it its duty to urge upon all municipal and sanitary authorities the importance, First: Of doing all in their power to promote vaccination in their respective communities; and Secondly: Of keeping all new comers and returned travellers, and especially all immigrants, under observation for fourteen days after their arrival, in order that should symptoms of this disease manifest themselves steps may be taken to circumscribe and isolate the centre of infection with the least possible delay.

By order of the Board,

BENJAMIN LEE, Sec'y.

Philadelphia, March 15, 1888.

BOOK REVIEWS.

DISEASES OF THE HEART AND CIRCULATION IN INFANCY AND ADOLESCENCE. By JOHN M. KEATING, M.D., etc., and WILLIAM A. EDWARDS, M.D., etc. Illustrated with Photographs and Wood Engravings 8vo, pp. 215. Philadelphia: P. Blakiston, Son & Co. 1888. Chicago: W. T. Keener.

This work appeared in instalments in the *Archives of Pediatrics*, prior to its issue in book form. The authors have made an excellent systematic work

upon the heart with especial reference to its diseases as they occur in infancy and childhood. Modern periodical literature has been most carefully culled, so that we find in this work a synopsis of the most recent researches into the pathology and therapeutics of the heart. Its contents are embraced in ten chapters which describe the following subjects: Methods of Study; Instruments; Fœtal Circulation; Congenital Diseases; Malformations; Cyanosis; Acute, Chronic and Ulcerative Endocarditis; Acute and Chronic Pericarditis; Treatment of Endo- and Pericarditis; Paracentesis Pericardium; Hydro-pericardium; Hæmo-pericardium; Pneumo-pericardium; Myocarditis; Tumors, New Growths and Parasites; Valvular Disease; General Diagnosis, Prognosis, and Treatment of Valvular Disease; Cardiac Neurosis; Angina Pectoris; Exophthalmic Goitre; Diseases of the Blood, Plethora, Anæmia, Chlorosis, Pernicious Anæmia, Lukuæmia, Hodgkins' Disease, Hæmophilia, Thrombosis, and Embolism.

The work deserves commendation as an excellent treatise upon its subject. We were surprised to find the blunt statement made, that the authors had "never derived any appreciable benefit from convalescence in any way whatever, and indeed it seems that the drug merits no place in our consideration." Unfortunately it is true that the preparations are so often variable in strength that they are not always reliable, but certainly from good preparations "appreciable benefit" can be obtained. They also, from their own experience, doubt the tendency of digitalis to accumulate in the system and produce suddenly toxic effects.

Two photographic illustrations of hearts with mitral valvular lesions have been introduced into the work. The photographs are very well made, but as is so apt to be the case where pathological specimens are thus depicted, the detail is so obscure that the illustrations are not very instructive.

MISCELLANEOUS.

RUSH MONUMENT COMMITTEE.—The Rush Monument Committee will meet at Cincinnati during the meeting of the American Medical Association. The hour and place of meeting will be announced from the platform on the first day of the meeting.
GEORGE H. ROBE, Secretary.

HON. MARSHALL D. EWELL, LL.D., one of the Faculty of the Union College of Law in this city, has been appointed Lecturer upon Medical Jurisprudence in the Law School of Cornell University for the next college year. This does not sever his official relations to the Union College of Law, in which he will still give his usual courses of instruction.

HEALTH OF MICHIGAN FOR MARCH, 1888.—For the month of March, 1888, compared with the preceding month, the reports indicate that tonsillitis increased, and that remittent fever and bronchitis decreased in prevalence. Compared with the preceding month the temperature for the month of March, 1888, was higher, the absolute humidity was slightly more, the relative humidity was slightly less, and the day and the night ozone were less. Compared with the average for the month of March in the nine years, 1870-1887, measles were more prevalent, and intermittent fever, diphtheria, consumption of lungs, remittent fever, pneumonia, whooping-cough, scarlet fever and inflammation of kidney were less prevalent in March, 1888.

For the month of March, 1888, compared with the average of corresponding months for the preceding nine years, 1870-1887, the temperature was slightly lower, the relative humidity was more, the absolute humidity and the day and the night ozone were less. Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of March, 1888, at twenty-five places, scarlet fever at thirty-three places, typhoid fever at thirteen places, measles at forty-nine places, and small-pox at one place.

Reports from all sources show diphtheria reported at fifteen places less, scarlet fever at twelve places less, typhoid fever at four places less, and measles at ten places more, in the month of March, 1888, than in the preceding month. Small-pox was reported present at one place, both in February and in March, but has now disappeared from the State.

THE CENTRAL KENTUCKY MEDICAL ASSOCIATION will meet at the Phoenix Hotel, Lexington, on Wednesday, April 18, 1888, at 10 o'clock, A.M.

MEDICAL ASSOCIATION OF THE DISTRICT OF COLUMBIA.—At the regular annual meeting, held on April 3, the following officers were elected for the ensuing year: W. W. Johnston, M.D., President; W. W. Godding, M.D., and C. W. Frazoni, M.D., Vice-Presidents; Geo. C. Ober, M.D., Secretary, and S. S. Adams, M.D., Treasurer.

GYNECOLOGICAL SOCIETY OF BOSTON.—At the annual meeting, held Jan. 12, 1888, the election of officers resulted as follows: Dr. H. C. White, President; Dr. A. P. Clarke, Vice-President; Dr. W. S. Brown, Treasurer; Dr. H. J. Harriman, Secretary; Drs. J. F. Frisbie, H. O. Marcy and E. C. Kellar, Committee on Admission; Drs. E. W. Cushing and J. W. Starbird, Committee on Pathology.

NEW BOOKS RECEIVED.

Physicians' and Students' Ready Reference Series. Obstetric Synopsis. By John S. Stewart. Illustrated. Philadelphia: F. H. Davis.

Transactions of the Academy of Medicine in Ireland, vol. v. Edited by W. Thomson.

The Year Book of Treatment for 1887. Philadelphia: Lea Brothers & Co.

The Prescription Therapeutically, Pharmacaceutically and Gram-matically Considered. By O. A. Wall. St. Louis: Ang. Gast.

The Surgical Diseases of the Genito-urinary Organs, including Syphilis. By E. L. Keyes. A Revision of Van Buren and Keyes' Text-book upon the same subject. New York: D. Appleton & Co.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MARCH 31, 1888, TO APRIL 6, 1888.

Col. Jedediah H. Baxter, Chief Medical Purveyor; Major Chas. R. Greenleaf, Surgeon, detailed as members of an Army Retiring Board, appointed to meet at Washington, D. C., on Wednesday, April 4, 1888. S. O. 75, A. G. O., April 2, 1888. Major Chas. H. Alden, Surgeon, will repair to Washington, D. C., on public business, and on completion thereof will return to his station, West Point, N. Y. S. O. 75, A. G. O., April 2, 1888.

Capt. Victor Biart, Asst. Surgeon, having been found incapacitated for active service by an Army Retiring Board, sick leave of absence is still further extended until further notice on account of disability. S. O. 77, A. G. O., April 4, 1888.

Capt. Edwin F. Gardner, Asst. Surgeon, leave of absence extended fourteen days. S. G. 77, A. G. O., April 4, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING APRIL 7, 1888.

P. A. Surgeon S. T. Armstrong, granted leave of absence for fourteen days. March 21, 1888.

P. A. Surgeon W. D. Bratton, promoted and appointed P. A. Surgeon from April 6, 1888. April 2, 1888.

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CHICAGO, APRIL 21, 1888.

No. 16.

ORIGINAL ARTICLES.

NASAL FIBROMATA.

Read before the Section on Laryngology of the Ninth International Medical Congress, Washington, D. C., September, 1887.

BY W. E. CANSELLBERRY, M.D.,

OF CHICAGO, ILL.

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, AND OF LARYNGOLOGY AND RHINOLOGY, IN THE CHICAGO MEDICAL COLLEGE, MEDICAL DEPARTMENT OF THE NORTHWESTERN UNIVERSITY.

Under this title it is proper to include only neoplasms of a purely fibrous or predominating fibrous structure which originate in the nasal fossæ anterior to the naso-pharynx. Tumors in this situation are prone to assume a compound type, *e.g.*, the fibromyxomata and the fibrosarcomata. The scope of this paper will not permit of consideration of these, notwithstanding their intimate relationship to the fibromata. Likewise of fibromata which originate in the neighboring sinuses, and which involve the nose only secondarily, must such meagre mention suffice as is essential to the elucidation of the nasal growths proper.

Recent literature has contained numerous reports of cases of *naso-pharyngeal* fibromata, recounting the various operative procedures for their removal, including preliminary subperiosteal resection, resection of the hard palate by Gussenbauer, osteoplastic resection of the superior maxilla by Langenbeck, Rouge's operation and the recent method by Furneau-Jordan. Nor have rhinologists failed to emphasize the advantages of the intra-nasal or intra-pharyngeal galvanocautery method as I will urge in nasal cases the use of similar means in preference to the other graver, disfiguring, and sometimes fatal operations.

Fibromata originating primarily in the nose anterior to the naso-pharynx are comparatively rare. The *Internationales Centralblatt für Laryngologie, Rhinologie und verwandte Wissenschaften*, a journal of abstracts of all current literature pertaining to these departments, does not contain a report of a single case during the last three years.

None are included in 265 cases of nasal neoplasm reported by Hopman, of Cologne (248 cases), and Schimegelow, of Copenhagen (17 cases). Of this series there were 121 myxomata, 63 myxomatous hypertrophies of turbinated bodies, 24 papillomata, 1 lupus and 1 sarcoma.

Yet their occasional occurrence has been recognized probably from the time of Hippocrates, who

had a large experience in connection with nasal polypi. "In cases of *hard* polypi Hippocrates¹ directed that the nostril should be slit open in order that the tumor might be thoroughly extirpated, and the roots afterwards destroyed by the hot iron."

Celsus² treated polypi in various ways, but he strongly disapproved of meddling with the *harder* tumors, which he considered malignant.

Modern authors treat briefly of the subject. Stoerk³ mentions fibromata as originating from the submucous structures. Cohen⁴ briefly but lucidly describes the neoplasm and mentions its comparative infrequency. Sajous⁵ mentions the roof as its favorite site in the nose, but remarks that cases have been reported in which fibrous polypi sprang from the septum, the inferior turbinated bones, and even the floor of the nose. He further notes the rarity of its primary occurrence.

Wagner⁶ writes: "Fibromata may develop in any portion of the nasal cavity; the floor of the fossæ, the turbinated bones, or lateral walls," and reports two cases.

Robinson⁷ thinks it so unusual in the nose and so usual in the naso-pharynx that he considers difference in location a point in diagnosis between fibroma and myxoma.

Mackenzie⁸ has reported a single case of his own and two others probably fibromata, and remarks in this connection: "Though fibrous polypus of the naso-pharynx is not unfrequently met with, this form of tumor extremely seldom originates in the nose itself; the only case, so far as I am aware, in which such a growth has been proved to exist being one of my own. There are, however, two other instances in which there is every reason to believe the tumors were fibromatous." It seems probable, however, that nasal fibromata are really more numerous than the few cases recently reported would indicate—a probability which tends to enhance our interest in the subject.

Growths in the nose and naso-pharynx in a measure correspond in type to the structural elements of the tissue from which they originate. The nasal mucous membrane consists of two layers: a superfi-

¹De Morbis, lib. ii, Lettre's Ed. Paris, 1851, vol. ii, p. 51. Mackenzie, Diseases of the Throat and Nose, Wood's Ed. vol. ii, p. 245.

²De Com. pharm. sec. Joann. lib. iii, cap. iii. Mackenzie's loc. cit.

³Klinik der Krankheiten des Kehlkopfs, der Nase und des Rachens. S. 99.

⁴Diseases of the Throat and Nasal Passages, 1880, p. 352.

⁵Diseases of the Nose and Throat, 1885, p. 146.

⁶Diseases of the Nose, 1884, p. 174.

⁷Nasal Catarrh and Allied Diseases, 1883, p. 256.

⁸Mackenzie, Diseases of the Throat and Nose, Am. Ed. vi, p. 377.

cial mucous stratum which is covered by epithelium, and a deep fibrous layer which has the position and functions of periosteum and perichondrium.⁹ In the upper or olfactory tract these two strata are closely adherent, while in the lower or respiratory tract they are separated by variable quantities of connective tissue. The fibrous layer has been shown by Panas¹⁰ to be especially abundant and more densely fibrous at the upper and posterior part of the septum and the immediately adjoining space on the base of the skull, hence the frequency of naso-pharyngeal fibromata, while in the anterior nares it is least abundant, and hence the more common occurrence in this location of the myxomata. Further, between these sites, around the posterior nares, the membrane presents a kind of transitional form, and growths in this situation are likely to present a corresponding fibromucous type. This observation, in connection with the assertion of Stoerk¹¹ that polypi arising from the mucosa (superficial layer) are of mucous structure, while those arising from the submucosa or periosteum are fibrous, affords a reasonable explanation of the comparative infrequency of true nasal fibromata. True, the attachments of ordinary myxomata are sometimes traceable to the periosteum or to the bone, but it is probable that they have first originated in the superficial mucosa and only subsequently penetrated to the deeper structures; or else, as Woakes¹² suggests, they have taken deep origin from the mucous elements which dip into and line the cells of the spongy bones.

Nelaton, cited by P. Koch,¹³ has advanced the opinion that fibrous polypi of the nose are never of a primary nature, but always proceed from neighboring sinuses, *e. g.*, the antrum of Highmore, etc. A practical refutation of this theory is furnished by a case reported by Gerdy in which, on post-mortem examination, a fibroma was found to be attached to the posterior part of the vault of the left nasal fossa.

Fibromata may arise from any part of the nasal cavities. The vault, especially its posterior portion, is the favorite site, since here is found in greater abundance the fibrous stratum from which they primarily originate, but the turbinated bodies, the cribriform plate of the ethmoid bone, the septum, and the floor of the nose may furnish points of origin. More or less extensive secondary adhesions may form in the course of the expansion of the growth as the result of friction and pressure, so that it is sometimes difficult to determine the original point of attachment.

Of the accessory cavities the antrum of Highmore is a favorite site of origin, fibromata in which become very large and encroach secondarily upon the cavities of the nose and orbits, and next in order are the frontal sinuses, tumors from which extend into the same cavities.

The etiological factors in the development of fibro-

mata are not definitely known, but a local irritation from traumatism may serve to excite a hyperplasia of the fibrous elements, as in one case of fibroma of the septum which was directly attributable to a blow on the nose. In other instances a localized perversion of the chronic hypertrophic inflammatory process may act as the exciting cause by stimulating the fibrous elements to unusual proliferation.

Both sexes and all ages seem equally liable. In this respect the disease differs from naso-pharyngeal fibroma, of which Lincoln¹⁴ collates 38 genuine cases, all of them males under 25 years of age. Nelaton,¹⁵ cited by Mackenzie, knew of no example of *naso-pharyngeal* fibroma becoming developed in a female of any age or in a male over 35. Of six cases of nasal fibroma collected in this paper three were females, one of 35 years, one of 39 years and one of 50 years of age.

The rapidity of growth, as indicated by the duration of the symptoms up to the time of operation, averages about two years. The early symptoms are those of a catarrhal nature, followed by obstruction and distension of the fossa. Its development continues to the detriment of bones or cartilages that may be in the way. These are absorbed, enveloped and rent asunder, the neoplasm penetrating into fissures, accessory sinuses and neighboring cavities. The bridge of the nose is flattened, the eyes bulged forward and the cheeks swollen, the whole constituting the hideous deformity known as "frog-face." Frequent and dangerous attacks of epistaxis may proceed from surface ulcerations. Extension upward may open the cranial cavity.

A probable diagnosis is not difficult. Its appearance *in situ* differs much from that of the mucous polyp. It is not multiple, but may be lobulated. The base is broad, the color is dark red, there is no translucency, and it is firm and resistant to pressure by a probe. It is more difficult to distinguish it thus from fibro-sarcoma and sarcoma. The microscope is the only means of positive diagnosis.

Fibrous tumors in this situation present the ordinary pathological characters of fibromata in general, in consistence they vary, being sometimes very dense and at other times softer and more succulent. The fibres which constitute the chief part of the growth are grouped in bundles of various sizes, or are simply closely interlaced and devoid of definite arrangement. A few minute cells, either round or spindle-shaped, may be present among the fibres or in larger numbers around the blood-vessels. The vessels are not usually numerous, but it is probable that the tumors, or parts of them, may partake at times of the erectile structure of the turbinated bodies. A smooth fibrous capsule usually envelops the whole.

Concerning the prognosis, nasal fibroma tends to degenerate into sarcoma when it is incompletely removed, or even without any interference. There is a tendency to recurrence after removal, although, if thoroughly extirpated and the base cauterized to the bone, the prognosis should be good.

⁹ Mackenzie, *Am. Ed.* ii, p. 238.

¹⁰ Bull. de la Soc. de Chir., 1873. Mackenzie. *Diseases of the Throat and Nose*. Wood's Ed., vol. ii, p. 368.

¹¹ Die Krankheitsender Nase, 1850, S. 20.

¹² Nasal Polypus, etc., in Relation to Ethmoiditis, 1887, p. 9.

¹³ Internationales Centralblatt für Laryngologie, Rhinologie und verwandte Wissenschaften, December, 1885, p. 256.

¹⁴ Archives of Laryngology, October, 1883, p. 258.

¹⁵ Rapport sur les Progrès de la Chirurgie, Paris, 1867, p. 235. Mackenzie, *Diseases of the Throat and Nose*, vol. ii, p. 407. *Am. Ed.*

I have tabulated and appended the records of eight cases, including one of my own which is also related in detail:

Mrs. R., æt. 39 years, first had a nasal polypus described as an ordinary myxoma removed from the left nasal fossa, by means of forceps, about ten years ago. She remained well for five years and then again noticed gradually increasing obstruction, and later a dark reddish mass presenting at the left anterior nasal aperture. Four years ago she submitted to operation under chloroform. The operation was a failure, only a few small pieces being removed by means of forceps and without the aid of artificial illumination. Severe hæmorrhage was occasioned at the time and continued intermittently for weeks. No relief was afforded. She declined further interference until February, 1886, at which time she came under the observation of Dr. W. T. Coleman and Dr. A. P. Gilmore, of Chicago, through whose kindness I have a portion of the record. The left nostril was much distended, showing evidence of commencing frog-face, and the fossa anteriorly was thoroughly filled in all directions by a firm elastic tumor which projected slightly from the anterior aperture. There was no undue prominence over the antrum of Highmore, nor encroachment upon the orbit. These gentlemen operated skilfully by means of the galvano-cautery. Efforts to include the neoplasm failed on account of its large size, tight fit and numerous adhesions. So the lower portion was slit up by the knife electrode, some adhesions separated in like manner, and a large section, perhaps one-half of the tumor, extracted by means of forceps. The operation was necessarily prolonged, painful and bloody. Through the courtesy of Dr. Coleman, the case was now referred to me.

Status Præsens.—Examination about ten days subsequent to the operation just described, March 4, 1886. The left half of the external nose is decidedly more prominent than the right. The left nasal fossa above the line of the inferior turbinated body is completely filled by a firm, elastic, irregularly lobulated neoplasm. No middle turbinated body is discernible, its position being occupied by tumor. The inferior meatus is free, corresponding to the portion of the growth already removed. The anterior two-thirds of the septum narium has been pressed far over to the right, narrowing the right fossa and enormously increasing the capacity of the left chamber. Rhinoscopic inspection posteriorly shows the nasopharynx to be approximately normal. Only a faint outline of the tumor, located well forward, can be seen through the left choana. The posterior part of the septum is in the median line.

First Operation, March 10, 1886.—The affected nostril was first thoroughly cleansed by cotton swabbing and by means of a condensed air spray of Dobell's solution. The parts were illuminated by the ordinary method of reflected gas rays projected through the anterior aperture, which was widely dilated by a bivalve speculum. Complete local anesthesia of the entire nostril was induced by hydrochlorate of cocaine applied in the form of a spray of a 5 per cent. solution repeated three or four times at intervals of three minutes, followed by a 10 per cent.

solution on cotton introduced and allowed to remain in contact with the fibroma for three minutes. I employed Flemming's galvano-cautery *écraseur*, devised by Seiler, which consists of a universal handle into which is inserted a pair of parallel tubes threaded with wire. The ends of the wire fall through eyelets, one on each side of the wheel in the axle-bar of the windlass, which is inserted into a slot in the handle so located that while holding the handle the loop can be wound in on the windlass by means of the thumb. I substituted steel or a tempered iron wire (piano wire No. 5) for the platinum usually employed. Platinum is devoid of resiliency, a property that enables the *écraseur* loop of steel wire to retain or regain its contour after contact, when one of platinum would remain permanently indented. The steel loop offers some resistance to tissues against which it is pressed, thus facilitating envelopment of the part. The steel wire is sufficiently tenacious and takes the glow from the battery practically as well as platinum, but a fresh piece must be used at each application. Before threading the parallel tubes it is well to withdraw the temper from the ends of the wire by heating them to redness, as the portion thus rendered ductile will wind more easily around the windlass.

I would catch in the *écraseur* the most easily enveloped lobule or corner of the growth, then connect the battery by running down the treadle with my foot, and at the same time wind in the loop, thus severing, without pain and with little or no hæmorrhage, a cubic centimetre or more of the growth. By a repetition of the process three or four such pieces would be removed in a sitting. Occasionally it became necessary to make a preliminary incision into the substance of the tumor with the knife electrode in order to prepare a place for the wire, or by the same means to detach an adhesion that the *écraseur* might take hold. The operations were repeated weekly, the patient using a cleansing spray in the interval. They might have been performed more frequently, every day or every alternate day for a time, thus shortening the duration of treatment, but the slower method sufficed and for good reason was preferable in this case.

During the course of some weeks the growth was thus followed up to its primary attachments, which extended along the horizontal plate of the ethmoid bone backward to the anterior surface of the body of the sphenoid. I regard the posterior portion of the vault, including the anterior perpendicular surface of the sphenoid bone, as the point of origin of the tumor, the base of which extended thence along the cribriform plate of the ethmoid bone, becoming adherent at the same time to portions of the superior turbinated body and the walls of the ethmoid cells. The absence of the middle turbinated body, which had been reduced to a rudiment by absorption from pressure, permitted more brilliant illumination of the parts above and not only facilitated operation, but enabled me with certainty to follow the tumor to its base. After the removal of all portions which could be included in the snare, I cauterized the base by means either of the galvano-cautery point, knife, or moxa electrode, causing the instrument to penetrate

TABLE OF OPERATIONS FOR NASAL FIBROMATA.

No. Date.	Operator and Reference.	Sex.	Age.	Duration of Symptoms.	Situation and Extent.	Point of Attachment.	Pathological Nature.	Treatment.	Result.
1. 1833.	Gerdy, Des Polypes et de leur traitement, Paris, 1833, p. 283; Mackenzie, Dis. of Throat and Nose, Vol. II, p. 375. Am. Ed.	Male.	13	1½ yrs.	Left Nostril.....	Posterior part of the vault of the left nasal fossa. Demonstrated by an autopsy.	Fibroma. Substance firm and elastic. On section seen to be purely fibrous structure. No microscopic examination.	Failure of attempt at removal by ligature and evulsion, followed by an attempt to cut thro' the base of the polypus with a bistoury, resulting in death from hæmorrhage.	Death from hæmorrhage.
2. 1872.	Lichtenberg, Lancet, 1872, Vol. II, p. 772. Mackenzie, Dis. of Throat and Nose, Am. Ed., Vol. II, p. 375.	Female.	35	2 years.	Pedunculated solid growth size of pigeon's egg, projecting through the left choana into the naso-pharynx.	Upper turbinated body and ethmoidal plate of ethmoid.	Fibroma. No microscopic examination.		
3. 1877.	Morell Mackenzie, Dis. of Throat and Nose, Am. Ed., Vol. II, p. 376.	Female.	50	1 year.	Left nostril entirely occluded; "frog-face" appearance, bulged forward; after removal size of goose egg, containing in its centre bones forming septum of nose.	Roof of nasal fossa well within the nasal cavity.	Fibroma. On section, hard, dense and pale, microscopically, with a few minute cells.	Evulsion with forceps, through naso-pharynx.	No subsequent history given.
4. 1879.	Kempf, Louisville Medical News, 1879, Vol. VI, p. 65. Warner, Dis. of Nose, 1884, p. 207.	Female.	21	2 mos.	A firm reddish elastic swelling, projecting down in front so as to appear outside the <i>ala nasi</i> and growing from the cartilaginous septum on each side. Exciting cause, a blow on the nose.	Septum nasi.....	Fibroma.....	Unsuccessful attempt at removal by forceps; severe hæmorrhage. Finally, crucial incision over the left side of bridge of the nose, and bones lifted out. Tumor then pulled out by finger.	Recovery. No recurrence six months later.
5. 1882.	Buchanan, Glasgow Medical Journal, Vol. XVI, p. 211. Warner, Dis. of Nose, 1884, p. 216.	Male.	29	2 yrs.	Multiple tumor on each side, of firm consistence, protruding from each side, having an aspect more fibrous than mucous. Quite vascular and resistant.	Superior turbinated body and anterior part of superior meatus.	Fibro-myoma, with greatly predominating fibrous structure. Also some smaller myxomatous growths. No microscopic examination.	Removed in 59 pieces by cold wire snare in 15 sittings. Previous attempts by forceps failed.	Recovery.....
6. 1883.	Jacquemart, Annales des Maladies du Nez, etc., de L'Ouvrier du Lar, du Nez, etc., Mai, 1883, p. 69.	Male.	29	2 years.	Left nasal fossa, occasioning deformity of nose. Pedunculated.	Posterior part of septum.	Fibro-sarcoma (microscopical). Included in this table because fibrous elements predominated, and because probably it originated as a fibroma.	Exposed, and removed by a medium incision through the bridge of the nose.	
7. 1884.	Jacquemart, Annales des Maladies du Nez, etc., Nov., 1884.	Female.	39	5 years.	Left nasal fossa; slight projection from anterior aperture, commencing in the middle of the "frog-face," total occlusion of nostril; naso-pharynx approximately of sphenoid bone (roof of nasal vault). Estimated size, that of a small vault.	Horizontal plate of ethmoid bone and anterior part of sphenoid bone (roof of nasal vault).	Fibroma. Microscopic examination. Composed entirely of regularly arranged bundles of fibres.	Removed piecemeal by galvano-cautery, assisted the end of 17 months. Recovery. No recurrence by same means. Re-peat sittings.	Recovery. Well at the end of 24 months.
8. 1887.	Cassidy, Section in Laryngology, Ninth Int. Medical Congress, Washington, D. C.	Female.							

each time to the bone. This also I did a small part at a time, fearing to produce much inflammatory action on account of the proximity to the cerebral meninges through the cribriform plate of the ethmoid bone. I cauterized everything which had any appearance of fibroma, preferring to touch that which was not fibroma rather than to leave untouched that which was. At the end of six months the tumor seemed thoroughly eradicated. The fossa above the inferior turbinated body was unoccupied by anything but rudiments of the middle and inferior turbinated bodies, the view of the vault in all directions being uninterrupted.

At the end of nine months a recurrent tumor the size of a small bean was discovered attached to the lateral wall, just above the anterior ends of the inferior turbinated body. Probably a point of secondary attachment here had escaped cauterization and redeveloped, for on account of the recession of the lateral wall it was at a point difficult of illumination and access, being just within the anterior aperture, but around the corner, as it were. This tumor was removed by the same means. At the end of seventeen months there is no appearance of any further recurrence, although in view of the known tendency to relapse in such cases she cannot even yet be considered wholly free from liability to redevelopment. I am indebted to Dr. Elbert Wing, Demonstrator of Pathology in the Chicago Medical College, and Pathologist to Cook County Hospital, for the microscopic examination of sections of the tumor which, confirmed also by my own examination, demonstrated it to be a fibroma.

Treatment.—Of the seven other cases appended, in No. 1 attempts at removal by ligature and forceps failed, and were followed by an attempt to cut through the base of the polypus with a bistoury, which resulted in death from hæmorrhage. The treatment in case No. 2 is not stated. In case No. 3 the tumor projected posteriorly and was removed by forceps introduced through the naso-pharynx. In three cases, Nos. 4, 5, and 7, external operations were performed to give access to the tumor: in No. 4 a crucial incision was made over the left side of the nose, and the nasal bones were lifted out; in No. 5 the nasal columna and septum were divided and the nose turned up; in No. 7 a median incision was made through the bridge of the nose. In case No. 6, possibly fibro-myxoma, the tumor was successfully removed, piecemeal, in fifteen sittings, by a cold wire snare. The advantages of the intra-nasal, galvano-cautery method, as detailed in my own case, are sufficiently obvious. General anæsthesia is unnecessary and the consequent shock and dread of operation are avoided. There is no external disfigurement, no dangerous hæmorrhage, and under cocaine, little or no pain. My patient would sit in the operating chair and have piece after piece removed without manifesting even discomfort. It is certainly a more brilliant operation, when possible, to encircle the entire tumor and remove it *in toto* at one sitting, but in case of the larger fibromata this will usually be impracticable on account of the impaction of the mass into the inequalities of the nasal fossa, and the

formation of adhesions. Moreover, the slower method of removal, piece by piece, offers the advantage of greater deliberation, implying also as it does greater precision, for when sufficient oozing occurs to interfere with the view further action is postponed until the next time. By repeated sittings the patient becomes accustomed to manipulation and learns to assist the surgeon by holding correctly. The surgeon also in turn by repeated opportunities to study the parts becomes so familiar with the area over which he is working that he can readily trace out all the ramifications of the growth. No undue inflammatory reaction follows and sepsis can be avoided by thorough cleansing of the nostril by means of an antiseptic spray.

In the case of Mrs. R., to whom any facial disfigurement would have been exceedingly abhorrent, the galvano-cautery used in this manner was the one means which rendered a formidable external operation avoidable. The nature of the case would have precluded an effective intra-nasal use of the cold-wire snare, ligature, forceps, or chemical caustics.

An agent capable of effecting such brilliant results naturally engenders an enthusiasm which is liable to lead to its abuse and a word of caution is not unnecessary in this respect. Accurate diagnosis, precise indications for its use, and a certain amount of skill on the part of the operator are essentials to the judicious employment of the galvano-cautery. And it must not be supposed that *all* cases of nasal fibroma will be susceptible of this means of cure. Enormous size and penetration into accessory cavities may render it ineffective.

Electrolysis has been successfully employed by Lincoln in naso-pharyngeal fibroma and it might prove serviceable in nasal fibroma of enormous growth, at least to reduce the size to such a point that the galvano-cautery could cope with it, thus avoiding an external operation.

An analytical record of cases is given.
70 Monroe Street.

A CASE OF LARYNGEAL GROWTH.

*Read before the Medical Society of the District of Columbia,
December 14, 1887.*

BY C. W. RICHARDSON, M.D.,
OF WASHINGTON, D. C.

Operations for the removal of laryngeal growth are of such common occurrence and the subject has been so thoroughly treated by laryngologists, that there would seem nothing new or interesting upon this subject to be added. The case I am about to report, while not individual, is one of uncommon nature and presents certain points of interest.

On November 4, 1886, Mr. W. E. S. was referred to me by Dr. Z. T. Sowers, with the following history: The patient had been unusually free from sickness of any character previous to the development of the present affection. His family history is excellent, no hereditary tendencies being found upon either paternal or maternal side. When about the age of 11 he began to sing as chorister boy, filling a soprano

part, in the church at his native home, near Sheffield, and continued to serve in that capacity until his 16th year, when he was obliged to desist on account of the period of mutation having set in. Later I shall try to show the influence of this singing upon the production of this growth. At about his 20th year, his voice had rounded into a deep bass, marred, however, with a very slight touch of hoarseness. Two years later this hoarseness had increased to such a degree that he was obliged to give up singing. This change in his voice became greater and a new symptom developed, which the patient described as a "catch in the voice." About this time our patient came to America.

Shortly after his arrival in America he noticed that he breathed with greater difficulty, especially at night, which continued to increase until the removal of the growth. Dysphagia was present to a slight extent.

Present Condition.—The first point that attracted my attention was the character of his voice, and his apparent difficulty of breathing. This voice was not one of marked hoarseness, as is usually found in cases of laryngeal growth, but rather resembling the hoarseness of laryngeal blennorrhoea, produced by three factors, viz.: the excessive amount of mucus which adheres to the chords not only preventing their apposition but also producing secondary tones, paresis, and infiltration into and thickening of the substance of the chords. While the patient was conversing with this slight hoarseness there was a sudden arrest of the voice, while the lips moved and the patient made violent attempts to speak—resembling very much the efforts seen in a stutterer—the words remaining unpronounced. After a few ineffectual efforts, a toss of the head, followed by a deep inspiration—attended with a decided stridor—he regained his voice. He continued to converse in this slightly hoarse voice until again interrupted by another complete cessation of the voice. These attacks, if I may so call them, were at times—when the patient persisted in his efforts to speak—accompanied by marked dyspnoea. Dyspnoea was another symptom from which the patient has suffered considerably, and it was this one alarming symptom which caused him to seek medical advice. He had no special hunger for air while in repose, or taking moderate exercise, but should he exert himself, as in walking fast, ascending heights and steps, or bicycling, the want of air became very pronounced.

Dyspnoea was very marked at night, and not infrequently attended with severe asthmatic seizures. The patient states, "For the last six months I have not had a pleasant night's rest. I am constantly aroused from my sleep by feelings of suffocation and when asleep toss from one side of the bed to the other." These asthmatic paroxysms occurred almost always while the patient was on his back, and very frequently while his face was covered with the sheet—a habit of which he was guilty while asleep.

Objective Examination.—The tongue was normal, as well as the mucous membranes lining the surface of the buccal cavity. Tonsils, uvula and palatine arches presented no deviation from the normal con-

dition. Pharynx congested, and presenting here and there small shreds of adherent mucus. Naso-pharynx quite roomy and showing slight glandular hypertrophy. On the first introduction of the laryngeal mirror, and the patient having been told to intone *a*, there was apparently nothing foreign discernible. The cords showed only a slight want of opposition, a fact readily explained by the large clumps of mucus interposed between and firmly adherent to their free edges. The whole of the larynx, epiglottis, ary-epiglottidean folds, false cords and arytenoids, presented quite a marked appearance of congestion. The vocal cords themselves were infiltrated, of a dirty, pinkish-yellow color, passing into a bright red at their free edges—covered here and there with small masses of adherent mucus. I told the patient to clear his voice, and introduced the mirror a second time—with no better result than before. I then caused the patient to make a deep inspiration, in order to get a good view of the sub-cordal portion of the larynx, but could discover nothing, except that this portion of the larynx was excessively congested.

The patient, being now quite restless, after allowing him to rest a few moments, I requested him to make a deep inspiration, to be followed by a forced expiration, at the end of which he was to intone *a*, sharply. Just before he finished his expiration, I quickly introduced my mirror and beheld the following: a large, bright red body about the size of a cherry was imprisoned between the vocal cords, extending from the anterior commissure to the processus vocales, posteriorly and overlapping to some extent the vocal cords. This growth presented two lateral and one inferior lobe, the latter being imprisoned between the cords, the former spreading over the cords on each side, thus acting like a valve, and explaining the pronounced dyspnoea which occurred during the aphonic stages. It can be readily seen how, the patient persisting in his efforts to phonate—the cords contracting upon the inferior lobe, the lateral lobes spreading out over the surface of the cords—the growth interfered with respiration until the desire for air became so great as to cause him to relax his efforts, the growth being drawn into the sub-cordal portion of the larynx in the manner already described. The patient being asked to inspire, which he accomplished after several efforts, the cords separated and the growth passed into the sub-cordal portion of the larynx. It is well to observe here that the cords, even during a deep inspiration, did not expand fully—the right cord, to which the growth was attached, never passing beyond the cadaveric position, the left cord making only a slightly greater excursion than its fellow. After several more examinations, I came to the conclusion that the tumor was attached to the under surface and inner edge of the right vocal cord within a line of the anterior commissure. After putting my patient through a thorough course of training, which the use of that valued agent, cocaine, does not render unnecessary, of four days' duration, and being satisfied that he would follow all directions, I decided to operate on the fifth day.

On Monday, November 8, in the presence of Dr.

Sowers, after thoroughly applying a 20 percent. solution of cocaine to the larynx, I removed the growth with Schræther's modification of Türk's pincette. On the first attempt at introduction of the instrument, and as I was passing back of the epiglottis, he made an effort at deglutition which compelled me to remove the instrument and the mirror. In a few moments I quieted him and again introduced my instrument, passing it well downward and forward to the anterior commissure to the point of attachment, and after firmly grasping the growth, evulsed it. Again examining the larynx, to see if all the growth had been evulsed, I found it so filled with blood as to obscure entirely the supposed site of attachment. On examining the patient the following day, I observed a small portion of the pedicle, about the size of a mustard seed, projecting from beneath the free edge of the right vocal cord. This was removed without difficulty and brought with it a small portion of mucous membrane. My patient had now nearly a clear voice. For several weeks thereafter, I made local applications of nitrate of silver for the purpose of relieving the co-existing laryngitis. After this course of treatment, I discharged my patient, completely relieved, with every function of the larynx normal, and he so remains at the present writing. I am sorry that I did not have a careful microscopical examination of the growth made—which I would have done had I intended reporting the case. From macroscopical appearances it bore all the characteristics of a fibroma.

There are several points of interest in this case, the most important of which, and the one to which I first call your attention, is that these forms of growth, especially when quite small, frequently lead to errors in diagnosis, even if one be an adept in laryngeal examinations. That they are not mere fancies, but that errors do occur may be illustrated by my own experience as well as that of others who have had vast experience in laryngological work. By citing a hypothetical case, which will not be overdrawn, I may better illustrate this point.

A patient comes with a history of slight hoarseness of some years duration, possibly slight dyspnea, his patience exhausted by a long course of ineffectual treatment by the general practitioner, and, I might add, in a doubting frame of mind. The patient undergoes his first laryngeal examination which on account of its nervous condition is attended with a little difficulty. A hasty view is obtained and the larynx is seen to be in a state of chronic inflammation, the vocal cords are infiltrated, presenting here and there little shreds of mucus running from one cord to the other, possibly showing a little insufficiency. The sub-cordal portion is seen to be in a much congested condition, and the growth on account of its small size and situation, being of the same bright red color as the sub-cordal mucous membrane, and lying well hidden beneath the anterior commissure and the cord to which it is attached, fails of detection. Rapidly running over in mind the conditions which could give rise to such symptoms, we eliminate all except chronic laryngitis, with slight paresis, the evidences of which are present, and im-

parting this information to our patient—a little guardedly, probably—and with the advice to call on the morrow, dismiss him. The same information he has probably received before, hence he leaves never to return. A few days later a neighboring specialist narrates to you an interesting case of laryngeal growth, and in it you recognize your case of a few days ago. Chagrin and vexation would not have been yours, had you been a little more careful and thorough in your examination. As I have previously stated, such cases are not fanciful, for I have seen three such mistakes committed, and in one of the cases was the error committed by quite a distinguished laryngologist. Prof. Schræther once made the remark while speaking of a case of this nature, that no laryngologist should allow such a patient, one presenting the symptoms enumerated above, to leave his consultation room with a diagnosis of chronic laryngitis only, without adopting all manoeuvres necessary to explain such a condition, of which the forced expiration after a deep inspiration, with the rapidly following intonation of *a*, is important in proving the existence or non-existence of a growth attached to the under surface of the cords. Even in the present case, the growth being quite large, at the second examination after the greatest care and effort I could not bring the growth to view and almost doubted my having seen it on the previous day.

On the fourth day—the patient now submitting freely to laryngeal examination—one of my professional friends who is quite an adept in the use of the laryngeal mirror, called, and, after I explained to him the nature of the growth, he proceeded to examine the patient. After introducing his mirror several times I could see by the expression of his face that he was beginning to doubt my diagnosis. I subsequently proved to him the existence of the growth, with evident satisfaction, as the incredulous expression gradually gave way to one of credulity. It is useless for one to assert that he would not make such an error, for even with these facts fresh in his memory, he may on the morrow be guilty of committing such an error. It is only by constantly calling attention to the possible errors in diagnosis that we are able to avoid them.

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ETIOLOGY OF TYPHOID FEVER, AS OBSERVED IN COUNTRY PRACTICE.

Read in the Section on Practical Medicine, Materia Medica, and Therapeutics, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY L. N. DAVIS, M.D.

OF FARMLAND, IND.

Philosophically it would not seem true that the forces of nature which shaped the human body and gave to it its symmetry also filled the air and water with a formidable foe to mankind. Such an admission would seem inconsistent with the ideas of man, not a reproach to the laws of nature. But the "germ theory" of the origin of many diseases, at present, is dominant; and it would seem poor policy for a med-

ical men to oppose the specificity of typhoid poison. It would be equivalent to inviting the contumely and discredit of his profession.

Not many years since the only requisite of science to establish the cause of an outbreak of typhoid fever, consisted in developing a defective sewer pipe, an illy kept cellar, or impure water supply. The specific element was by no means always a consideration in the elaboration of the poison. With so light a task before him, the attending physician seldom traversed much territory, literally or mentally, before the *hot-bed* of disease was discovered. If in the country, a hog-wallow or a pile of rotten potatoes would answer, in the absence of the above essentials. He must now, however, account in some manner for the presence of an organized poison or germ in the production of typhoid fever. The ingenuity of the country doctor is often sorely tried in such an inquiry, but his credulity many times leads him to the desired results. The wonderful and unique properties attributed to the disease germ makes almost any theory of its development or transportation probable, and allows credulity a wide range of application, but doubtless often, *a priori*, the views adopted are incorrect.

For the last 8 years typhoid fever has occupied the place formerly held by malarial fevers in our section (Randolph Co.). This change has been noted in many other instances, by great authorities; why it occurs they do not attempt to tell. Drainage has been steadily advancing in the district for the past 30 years, but does not yet approach perfection. Typhoid fever has prevailed sporadically, with no large number of cases in any given locality, and during the time specified I have known of almost every case within an area of ten miles square. To exemplify the impossibility of finding, in the country, the positive source of and medium through which the virus of typhoid fever enters the body of the patient, and as bearing facts upon the period of incubation, contagiousness and predisposing causes of the fever, I will give a brief history of the following outbreak:

On the 26th of September, 1886, I saw Miss Ida Ford, æt. 24 years, junior member of a family of four persons, including a farm hand. Miss Ford was born and raised on the farm and in the house she now occupies. She has not been off the premises to dine or stay over night for more than three months, nor has the family visited or entertained visitors within that time. The family uses water from a well about twenty feet in depth that has served them continuously for a period of 25 years. The well is situated on a slight eminence, so that the surface water inclines away from it in every direction, neither is it probable that there is any infiltration from the distant barnyard or meadows.

There has been no sickness in the Ford family for 10 years of any character, and never was a case of typhoid fever on the place since it has been settled by the whites. To my certain knowledge there has not been a case of typhoid fever nearer the residence than two and one-half miles for 15 years. No case even at this distance for more than 2 years.

The case was pronounced one of typhoid fever. It was attended with a high temperature and much

nervousness, but no diarrhoea at any time, and terminated in recovery in 21 days.

The dejections from the bowels were of a solid character throughout the disease, were always disinfected with nitric acid, carried a distance from the house and buried in the earth. The clothes of the patient and the bed linen were changed every other day. Visitors had been rigidly excluded from the sick room during the continuance of the case. Her mother was her sole nurse, and she was scarcely absent from the bedside of the patient 20 minutes at one time during her sickness; many times, indeed, she occupied the bed with her daughter over night.

About 28 days after the attack of Miss Ford, her mother took the disease also. Mrs. Ford was 54 years of age and of delicate build; she had two severe hæmorrhages from the bowels at the end of the second week; was sick one month and three days, when she died.

The nursing in this case was entrusted largely to the neighbor women by night and the husband during the day. Seven or eight persons were thus engaged, by turns, during the whole course of the case. Of this number Mrs. Bales, who lived about a mile distant, bore about an equal part of the burden.

On the 12th of December, or 28 to 35 days from the time she commenced to wait upon Mrs. Ford, Mrs. Bales fell sick. Of the seven or eight nurses above referred to, Mrs. Bales was much the most feeble of constitution. It has never been my fortune to wait upon a worse case of typhoid fever than followed. She had two hæmorrhages from the bowels, and passed much of the winter in a semi-conscious condition, but finally recovered.

The Bales family consists of eight members, but a farm hand and an assistant in the kitchen were employed during the sickness. The Bales' residence is a commodious two-story frame house which has only been built 3 years. The site is elevated and has never before been occupied by a building. The well was dug and the outbuildings constructed when the house was built. Prior to the sickness of Mrs. Bales there has been but one case in the family demanding the attention of a doctor since the house has been occupied—a case of summer diarrhoea in an infant of 3 months. The eldest daughter, who is a rugged girl of 20 years, had been employed in the Ford family about four weeks during the sickness of the latter. Later she became the principal attendant upon her mother. The five remaining children were excluded from the sick-room. I need scarcely add that the fecal discharges were cared for as in former cases, and the bed linen changed every forty-eight hours. The sleeping apartments of the children were upstairs, while the sick-room was on the first floor.

Notwithstanding the precautionary measures, precisely twenty four days after the mother took sick the five children, æt. from 8 to 18 years, began to manifest symptoms of the disease. The subsequent three weeks gave full development to all the phases of typical and grave typhoid fever in each of the five cases. All recovered. The oldest daughter, who had shared the danger, whatever it might be, in both families, escaped; also Mr. Bales and both hired assistants.

In the Ford family the husband, hired hand, two or three kitchen girls and all of the nurses but Mrs. Bales escaped, thus giving indubitable proof, which requires no argument, that the water could not have been the source of the poison.

Excluding the drinking-water, which is the vehicle of such baleful influence in so many well authenticated epidemics of typhoid fever, to what source must we look for the cause of our first case? Water is thought to be the channel through which the poison is conveyed to the patient, inasmuch as 95 per cent. of all the cases are thought to be thus caused.

The atmosphere is the only other means that is recognized as capable of conveying the poison, and it is potent only at a very short distance. If atmospheric infection be offered as a solution of the mystery, we meet with the same difficulty as with the water: we cannot account for the introduction of the poison, nor why so many who breathed the same air escaped the disease.

Therefore we are compelled, in this instance—as in many others—to ascribe to it autochthonous origin. The constitutional proclivity of our first case invited the attack; it was the only case originating from the first cause.

Mrs. Ford contracted the disease, directly or indirectly, from her daughter; she was the only close attendant and the only other member of the family who became infected. Whatever the nature of the virus, it seems to have been limited to the immediate vicinity of the patient's body, and to have been capable in twenty-eight days of producing an effect on the constitution of a previously healthy person. Mrs. Bales imbibed the poison in the Ford family. She carried it home. In twenty-eight days from the time it made an impression on her system, it was capable of striking down five of her children. The sitting-room occupied by the children communicated with the sickroom of their mother, and they received the poison through an infected atmosphere. The eldest daughter in the Bales family—the most rugged of the children—who went through the entire sickness in both families escaped; Mr. Bales and two hired assistants, besides visitors and transient help, escaped. At the Ford residence all save Mrs. Bales, who was of very feeble constitution, escaped; showing quite conclusively that the drinking-water, as before observed, of neither of the families contained the poison, otherwise the infection would have been more general. The conclusion which follows, therefore, is that the real nature of the *materies morbi* of typhoid fever is but little known; that if it is not autogenetic, its origin many times is involved in impenetrable obscurity; that the organism or chemical product is as likely to assume an active form in the healthy surroundings of an isolated farmhouse as amid the filth of a badly neglected village or city; that constitutional proclivity, feeble health, or bodily fatigue has much to do in determining an attack. It is more than probable, also, that the poison may remain latent in the system until evoked by physical exhaustion, despondency, or other conditions of vital depression. Twenty-four to twenty-eight days constitute sufficient time for the poison to escape from the

body of the sick, ripen if imperfect, and produce a toxic effect on the system of a previously healthy person. The poison which perpetuates the disease is not contained in the stools alone, but may emanate directly or indirectly from the body of one sick with typhoid fever. Water is certainly not the medium which conveys the poison, even in a small majority of the cases, in the country. But we cheerfully admit that the country doctor is not trained in the kind of knowledge which makes his observation of the etiology of disease highly valuable. May we not also question the propriety of the present trend of the highly learned in the profession, in practically accepting as facts very much that is not susceptible of demonstration, relative to the causation of disease?

GRADUATED TENOTOMY IN THE TREATMENT OF INSUFFICIENCIES OF THE OCULAR MUSCLES. (STEVENS' OPERATION).

Read before the Philadelphia County Medical Society, May 14, 1885.

BY CHARLES HERMON THOMAS, M.D.,

OF PHILADELPHIA.

The study of disorders of the ocular muscles in relation to functional nervous diseases has received a strong forward impetus during the past year, chiefly due to the published results of the labors in this direction of George T. Stevens, of New York, whose work on "Functional Nervous Diseases," recently published,¹ has challenged special attention, even where it has not met with entire approval.

The subject occupies a standpoint on the line between the two important specialties of ophthalmology and neurology, it takes somewhat from both, and has already, by force of circumstances, become in a certain sense a specialty by itself. The operation and its application have, until recently, remained to a remarkable degree personal in the hands of Dr. Stevens, notwithstanding that for many years he has reported it before medical societies and in the medical journals.² All this, however, has been recently changed by the publication, within the last year, of his work above referred to, which has brought the method into such prominent notice as to compel recognition.

Other operators have now entered the field, among whom is Prof. A. L. Ranney, of New York City, who, as a neurological specialist, has reported³ a series of cases of the gravest neuroses successfully treated by the Stevens' method. Beyond question a point has now been reached which shows the subject to be worthy of the most sincere investigation.

What I have to present to-night is, to a certain extent, in the nature of a preliminary report: as my

¹ D. Appleton & Co., N. Y., 1885.

² See articles by Dr. George T. Stevens, on "Chorea" (*Medical Record*, 1876), on "Anomalies of the Ocular Muscles," (*Archives of Ophthalmology*, June, 1877).

³ "The Treatment of Functional Nervous Diseases by the Relief of Eye Strain," (*New York Medical Journal*, Jan. 7, 1885).

work is necessarily incomplete in some particulars, owing chiefly to the considerable length of time required for observation to arrive at a just estimate of the permanency of the results obtained—especially in the gravest and, therefore, most important cases. I shall attempt to add little that is new to the presentation of the case as made by Dr. Stevens himself, and I cannot hope, in the length of time allotted for its consideration, to make a statement commensurate with its importance, but I have thought it right to rehearse briefly its principal features and to give my own experience in connection therewith, together with a sketch of a few of my own cases; because I have become convinced of the importance of the subject, and also because it has not, heretofore, been brought before this Society—nor, so far as I can learn, before any other of the medical societies of Philadelphia.

It is now about ten years ago that the operation was first brought to my notice by patients who had been under Dr. Stevens's care. It seemed to me incredible that results such as they claimed were produced in their cases could have been derived from the cause assigned. Again, I questioned the practicability of performing the operation in the definitely graduated manner which was said to be practiced. Under these circumstances, and in the absence of better information, my position was for a long time one of earnest opposition to the practice in question. About three years ago, however, having under my care several cases of muscular asthenopia which I was unable to relieve, though I obtained the advice of several of the best known ophthalmologists, and being freshly reminded of the work of Dr. Stevens by a patient of unusual intelligence and reliability, who reported great relief obtained at his hands, I asked his assistance in the treatment of these cases. He kindly demonstrated to me, upon patients of his own, the practicability of the operation, and I became convinced of its great value. The results obtained were so satisfactory that since that time I have investigated the muscular as thoroughly as the refractive conditions in all cases coming under my care, and have as faithfully undertaken to correct them.

For the discovery of abnormality in any of the straight muscles, their physiological condition, both while at rest and in action, and in all states of the accommodation of the eye must be thoroughly understood. In order that binocular vision may result, the visual lines of both eyes must converge upon the same point, whatever may be the position and distance of the object. It is only under such circumstances that the rays of light are brought to a focus at corresponding points upon both retinae. A slight deviation results in diplopia, constituting strabismus, a subject sufficiently well understood, and to which Stevens's researches do not directly apply. But while there may be perfect binocular vision, and not the slightest indication of strabismus, there may be, nevertheless, grave faults affecting the recti. It is these faults that Dr. Stevens has emphasized, and to these his observations have been chiefly confined.

In the normal condition of the ocular muscles the visual lines of both eyes naturally preserve an almost exactly parallel direction when looking at distant objects; and they maintain such a position of their own accord from muscular tonicity alone, without the necessity of any additional stimulus. This can be shown by prismatic tests. The artificial diplopia produced in making the test will be such that the two images will lie in that plane which is at right angles to the base of the prism.* If, for example, diplopia be induced by a prism placed before either eye with its base directed either outward or inward, the two images will lie in the same *horizontal* plane; and similarly, *vertical* prisms, with base up or down, will induce diplopia; but in this case the two images will be situated in the same *vertical* plane. The reason for this is because the normal visual lines of both eyes naturally lie in the same *horizontal* and *vertical* planes, even when the powerful stimulus which the need of binocular vision presents is abolished by the prism. Hence, if the eyes in the normal state be directed to a distant object, binocular vision will occur without the need of extra muscular action to bring the visual lines to properly bear upon the object. If, on the other hand, the visual lines of the two eyes do not naturally take the proper position, one of two things will result, either there will be no effort to bring them into correspondence, and strabismus with attending diplopia occurs, or, *more frequently*, by an extra *nervo-muscular* effort, called into action by the demand for binocular vision, the proper position will be maintained; just as in facultative hypermetropia accommodation is necessary, even when parallel rays coming from a distant object are to be brought to a focus upon the retina. From this forced, though it may be involuntary or even unconscious effort to maintain the proper direction of the visual lines, the abnormal conditions under consideration result. We have abundant clinical evidence of the enormous expenditure of nerve force under these circumstances, and of the development of marked reflex disturbances, which are manifested both in symptoms of irritation and of exhaustion.

Dr. Stevens has[†] introduced a series of terms descriptive of the various abnormalities to which the recti muscles are subject. The word *exophoria* designates simply an outward tendency of the visual lines, without implying anything as to which muscle or set of muscles is at fault. The opposite condition, namely, tendency to convergence, is designated by the word *esophoria*, meaning an inward tendency. If either visual line deviates above its fellow, the fact is expressed by the term *hyperphoria*, right or left as the case may be, always remembering that the lower image represents the higher-tending visual line. It is to be remarked that the condition of hyperphoria is far more frequently productive of

* That Dr. Stevens was by any means the first to employ prisms for the discovery of muscular irregularities, but he appears to have used them with greater precision and by more systematic methods than have heretofore prevailed.

† "A System of Terms relating to the Conditions of the Ocular Muscles known as 'Insufficiencies,'" by George T. Stevens, M.D., Ph.D., New York Medical Journal, Dec. 4, 1886.

serious reflex disturbances than any other fault, and mainly for the reason that a small amount of deficiency in this direction may, and usually does, involve a considerable proportion of the total co-ordinating power of the vertical muscles; and this because the power of surmduction is usually limited to about three degrees, while that of abduction is about eight degrees, and that of adduction may be fifty degrees and upward. The generic term to express any deviation whatever from *orthophoria*, the normal, is *heterophoria*. Finally, the amount of heterophoria found in any given case is equivalent to and expressed by the degree of the prism required to correct the fault.

In practice, the tests for insufficiency are made by placing prisms before the eyes with their bases in certain definite directions. Lateral diplopia is produced by a prism with base in, vertical diplopia by a prism either up or down. If in lateral diplopia so induced, either image is above the plane of its fellow, we know that the higher image belongs to the eye whose visual line is lowest, to be expressed as hyperphoria of the opposite eye. If, in induced vertical diplopia, either image deviates from the vertical, we have lateral fault—esophoria if the diplopia be homonymous, exophoria if crossed.

In applying the prism test for the discovery of muscular anomalies it is not sufficient to be content with the results of a single or even several examinations, because we must always bear in mind the possibility of latency—that is to say, like latent hyperopia, the true fault may be concealed or masked. Indeed, as in latent hypermetropia we sometimes have apparent myopia through spasm of the muscle of accommodation, so in actual esophoria an apparent exophoria may be manifest, the result of spasm of the externi, and this is equally true of the other muscles. It is only by a careful consideration of all the circumstances, such as the degrees of abductive and adductive power; and, finally, by the use of temporary correcting prisms for whatever fault may be manifested, and following it up—but not leading it—as it develops, by a new correcting prism until the fault becomes stationary, that we are justified in proceeding to operation. In one obstinate case of exophoria I have several times obtained relaxation of spasm of the interni by a moderate dose of morphia administered hypodermically. But, though the after-results proved the observation under morphia to be expressive of the true condition in this case, there are obvious objections to the use of the drug as a matter of ordinary practice. The discovery of an efficient and safe agent for the relaxation of spasm of the recti muscles is greatly to be desired.

It sometimes happens that muscular anomalies of considerable degree are discovered in connection with refractive faults. By correcting the refractive error first not infrequently the muscular difficulty soon disappears, showing the muscular to have been dependent upon the refractive state. The correction of refractive errors, especially those of a hypermetropic character should always be made before applying the prismatic tests.

Defects of refraction and accommodation are well known as the source of serious reflexes, especially headaches or severe migraine, nausea and dizziness; but it is not so well known that defects of muscular adjustment through faults of the guiding muscles of the eye produce all these and many more serious results besides. From Dr. Stevens I quote:

"Respecting the importance to be attributed to ocular, refractive, and muscular anomalies, I fear that my views will for some time to come continue to be regarded as something more than radical; but I am ready to reaffirm the proposition made years ago, that, among the various elements constituting the neuropathic tendency, these anomalies must be regarded as occupying a preminent position.

"Summing up the experience in this field of work, it is shown that, not in occasional and rare instances only, but in a large proportion of cases of the most redoubtable neuroses, unusual and most salutary results may be anticipated from attention directed to visual troubles."

Among the neuroses shown in many cases to be dependent upon such troubles, are to be mentioned neuralgia, spinal irritation and neurasthenia, chorea, epilepsy, and mental disorders. Dr. Stevens further says:

"Not only are those painful or irregular conditions usually described as neuroses in great proportion responsive to the relief from ocular tensions, but a great variety of conditions commonly regarded as local affections yield as readily, and prove that with some possible local complications they are, in fact, reflex phenomena. As an instance of this class of trouble, I may mention the fact that in more than a score of cases of extreme dysmenorrhœa—in each of which the periodical suffering has been of intense character, of regular occurrence, and of the full duration of the menstrual life of the patient—the dysmenorrhœa has failed to occur after relief to the tension of a superior or inferior rectus."

So far as my experience goes, epilepsy very rarely results from simple conditions. The ocular anomalies in epilepsy are of the most complicated, and often of the most obscure character. A simple insufficiency may induce headache or other minor manifestations, but the ocular causes of epilepsy are usually of a character most perplexing to the surgeon, and sometimes of a character which cannot be completely remedied. Hence, great patience, and, in certain cases, much time and skill are required to accomplish that which can finally be done.

If, in the meantime, the patient and his friends are constantly assured by both lay and professional advisers that his efforts must, of necessity, prove fruitless, he is apt to withdraw from treatment, even while defects which are of great importance, are known to exist, and which, by continued efforts, might be removed."

Professor Ranney is authority for the statement that in cases of epilepsy of long duration under treatment directed to ocular difficulties, the affection

* See "Ocular Irritations and Nervous Disorders," by Dr. George F. Stevens, (N. Y. Medical Journal, April 16, 1887.)

has been scarcely less tractable than diseases commonly regarded as easily curable.

As furnishing a suggestion as to the possible method of production of epileptic attacks from eyestrain, it is interesting to note some experiments performed several years ago by Drs. Dercum, Parker, and others in the artificial induction of convulsive seizures. They found that it was possible to produce spasms in many persons by the following method:

"The subject being seated, the tips of the fingers of one or both hands were so placed upon the surface of a table as to give merely a delicate sense of contact—*i. e.*, the fingers were not allowed to rest upon the table, but were maintained, by a constant muscular effort, barely in contact with it. Any other position involving a like effort of constant muscular adjustment was found to be equally efficient. Any one object in the room was now selected, and the mind fixed upon it, or some subject of thought was taken up and unswervingly followed.

"After the lapse of a variable period of time, extending from a few minutes to an hour, and depending upon individual peculiarities to be noted, . . . the subject was frequently thrown violently to the ground in a general convulsion, preceded by tremors which rapidly became more violent.

"Seizures equalling in violence a general convulsion were by no means induced in all subjects, and were generally the result of experiments repeated many times during the same evening. In the experimentors the convulsions became so easily induced that it was thought advisable to desist for a long period."

The effort of constant muscular adjustment here spoken of appears not unlike the condition found in the eyes in cases of insufficiency of the ocular muscles; and it seems not unreasonable to infer that if such strain of the muscles of the forearm would produce results of the kind reported by the authors just named, that the strain upon ill-balanced ocular muscles (which must be continuous during the whole of the time that the eyes are opened) should be productive of even more serious, and, indeed, permanent results.

In the majority of these cases there is but one satisfactory method of treatment, and that is graduated tenotomy. The operation consists in making a small opening through the conjunctiva, exactly over the insertion of the tendon, when the tendon is seized by extremely fine forceps and divided outwardly in each direction, preserving the extreme outer fibres, or at least the reflection of the capsule of Tenon, which serves as an auxiliary attachment. Tenotomies for strabismus and so-called partial tenotomies have, of course, long been made, but there are radical differences between these and the operation here described.

The fan-shaped expansion of the tendons of the recti at their points of insertion into the sclerotic are somewhat wider than is generally supposed, while

the elasticity of their edges is an influential factor in determining a favorable result in the purpose of the operation—that is, in bringing about a relaxation which shall be permanent by permitting the divided portion to retract and form a new attachment to the globe further back.

The use of prisms as a means of treatment of marked heterophoria is not to be relied on; as in many cases they are found to be insufficient and disappointing.* They have, however, a certain value as means of systematic exercise of the ocular muscles, particularly in the milder cases.

When the correction is made by tenotomy, all that is necessary to be done in a given case should be regarded, in a sense, as one operation, though it may be in several stages and at different periods—as a watchmaker counts the regulating of the watch one operation, though he may be obliged to move the regulator a number of times; or as the correction of an astigmatism is one operation, though it may involve a number of sittings.

In one complicated case I have operated as many as seven times; the first operation nearly two years, and the last a week ago; the net result being an unquestionable gain both in head symptoms, which were at one time alarming, and in the severe asthenopia to which the patient had long been subject. Previous to the operation she had suffered from severe pain in the region of the eyes and in the back of the head, accompanied by general nervous distress of an entirely disabling character. An eminent ophthalmologist declared her to have organic disease at the base of the brain from the appearance of the eye ground. This was about three years ago. To-day this lady assured me that she felt "wonderfully better," and expressed her entire satisfaction with the treatment she had received.

It is to be reëmphasized in this connection, as an additional caution, that no operation is ever to be undertaken unless the indications for it are positively made out. From a perfectly plain case, evident to the merest tyro, to one demanding the greatest skill and patience of the most experienced, there is every gradation. Nothing would tend more to bring discredit upon the procedure than premature operations, which might result in such disturbance of the ocular muscles as seriously to cripple binocular vision without in the least alleviating the reflex condition for which the operation was undertaken.

Mrs. G. H. C., referred to me by Dr. W. H. H. Githens, æt. 32, married, mother of four children, has suffered for many years from almost constant severe headache combined with a feeling of drowsiness, the seat of the pain being the brow and vertex. Eye-balls painful, always felt better when the eyes were closed. There is frequently double vision, but no manifest strabismus. General condition markedly neurasthenic. Although there was no error of refraction except a very slight amount of hyperopia,

* See "Artificial Induction of Convulsive Seizures," by Drs. F. N. Dercum and A. J. Parker, *Journal of Mental and Nervous Diseases*, October, 1884.

* Since this paper was written a physician of this city—himself an accomplished neurologist—who habitually wears spectacles for the correction of refractive errors, and who also suffers from muscular faults, in a conversation with me said with emphasis: "It is impossible for me to wear prisms. I have tried them thoroughly and know they would drive me crazy."

shown only under full mydriasis, the patient was unable to use her eyes at any near work, such as reading, sewing, etc., and at all times suffers from extreme intolerance of light. Ophthalmoscopic examination negative.

Muscular tests: The first examination showed an esophoria of 9° , which, under the use of partially correcting prisms worn for ten days, developed into settled fault of 26° of esophoria and 28° esophoria in accommodation.

Tenotomy of the left internus relieved all the muscular fault except 1° , which I have allowed to remain. The relief of all symptoms was immediate and complete. The headache, the pain in the eyes, the intolerance of light, the drowsiness and double vision have all vanished. She is now able (without the aid of glasses) to read and sew as well as anyone, and threading a needle, which previous to the operation was almost an impossibility for her, is now done with facility. The general health and spirits have improved to a remarkable extent. Perhaps no change in her condition is more marked than of her tone of voice, which from being high-pitched, nervous, almost wailing in character, has been moderated, mellowed, and vastly improved.

As additional illustration of what may be accomplished, I may mention the following case of Dr. Stevens:

J. H. W., thoroughly healthy boy, without any nervous symptoms whatever, has been under my oversight since infancy. Except for a chronic tarsal ophthalmia there was nothing to call attention to the eyes. Very slight hypermetropia, for which I had prescribed glasses several years ago. On examination three months ago there were 11° of esophoria manifest, for which an operation was performed, removing 7° of the fault. Two weeks later 4° additional were manifested; a week later the total manifest esophoria was 9° , when a second operation was performed, which resulted in the removal of 8° of the 9° then existing. A recent examination shows a manifest esophoria of 3° , being a let-out of 2° since the last operation.

From the first operation a marked change took place in his facial expression; his eyes, which had previously been almost closed, opened widely, the tarsal ophthalmia showed prompt improvement, and he expressed himself free from a constant struggle to keep the eyes from closing, which he had not noticed as dependent upon any condition of his eyes until after it had been relieved.

I present the patient this evening for the purpose of demonstrating the amount of set-back given to the tendon, which, though invisible under ordinary circumstances, may be readily seen, upon causing either eye to be rolled outward, as a vertical line in each eye, about 2 millimetres wide in one and a little less in the other, where the sclerotic is plainly visible through the conjunctiva.

Whether the claim made that the neuropathic predisposition is more frequently due to eye-strain than to other conditions is fully justified by the facts or not, it is unnecessary at present to determine, seeing that enough is known to make it certain that eye-

strain from muscular fault is the cause of grave and varied reflex neuroses, and that in these cases carefully graduated tenotomy promises relief; besides, there is in such cases often sufficient justification for the sake of the eyes and sight—apart from the nervous condition—for the correction of the fault.

My own experience covers many of these operations, performed for the relief of a variety of conditions, and, notwithstanding serious difficulties at times encountered, I have a steadily increasing confidence in the legitimacy and value of the method.

SENILE HYDROCEPHALUS.

Read before the District of Columbia Medical Society, December 7, 1887.

BY D. S. LAMB, M.D.,
OF WASHINGTON, D. C.

I show this specimen to illustrate the atrophy of the brain that sometimes takes place in old age, as well as the compensatory dilatation of the ventricles that takes place at the same time, made necessary by the fact that the brain is in a hard case. The woman was old, said to be 82 years, and had been somewhat demented for an indefinite time, explained doubtless by the progressive atrophy. November 24 she was seized with left hemiplegia and died six days afterwards, the 30th. The post-mortem examination illustrated well the abundance of pathological material which is sometimes found in an old person. The brain was atrophied and its ventricles dilated; the ventricular fluid, as well as the subdural and sub-arachnoidal, was increased in quantity, but transparent and clear as water. There was some congestion of the dura mater. The arteries were markedly atheromatous, and there were clots in several of them. The spinal cord, as low down as it could be examined from the brain cavity, was atrophied. The thyroid cartilage was brittle, with chalky deposit, and broke with ordinary handling. There was a mucopurulent accumulation in the pharynx and larynx. The lungs showed small chalky and pigmented nodules in upper lobes; probably from the cure of incipient tuberculosis. The lower lobe of the right lung showed sufficient recent pleurisy and pneumonia to prove in a weak person a sufficient cause of death.

The heart and pericardium were everywhere closely attached to each other by old adhesions. The substance of the heart itself was fatty; the aortic and mitral valves, as well as the aorta, were atheromatous. There were old adhesions of the liver to the diaphragm. The liver itself was small, atrophied, but the gall bladder was as much distended with bile as I ever saw it, projecting several inches forwards from the anterior border of the liver; apparently she had had no use for bile for some days, and it had greatly accumulated. The spleen was much atrophied; the intestines were not opened. The kidneys both showed contraction and small cysts, as well as some adhesion of capsule, suggesting chronic nephritis. The uterus was atrophied, but contained at the fun-

pus and projecting into the cavity a polypus the size and shape of an almond; the uterine mucous membrane was covered with dark blood, so that we might say that the polypus was *still active*. The ovaries were atrophied; the Fallopian tubes dilated.

MEDICAL PROGRESS.

STATISTICS OF SURGICAL TUBERCULOSIS.—SCHMALLFUSS bearing in mind Volkmann's remark that tuberculosis in children and adults varies in regard to its curability and danger to life with the localization of the tuberculous foci in the different organs, regions of the body and tissues, has collated the operations for the past 10 years in Maas's clinic in Würzburg. The list does not include the polyclinic cases.

During the last ten years from which the statistics are taken Maas treated 1287 cases of tuberculosis, or 14.5 per cent. of the whole number of patients; 748 were males and 539 females; 58 had multiple tuberculosis.

I. Tuberculosis of Bones and Joints.—978 cases.

1. *Knee-joint*, 227 cases=18 per cent. of the whole number, and 23 per cent. of cases of bone tuberculosis. 33 per cent. in children under 16 years of age. Cured and improved 69 per cent.; died 14 per cent., of which 5 per cent. were children. Resection was performed in 27 cases, amputation in 49, 6 of these after previous resection.

2. *Ankle-joint and foot-bones* 187 cases=14.5 per cent. of all cases of tuberculosis, and 19 per cent. of cases of bone tuberculosis. Of children under 16 years old there were 38 per cent. Cured and improved 79 per cent.; died 5 per cent. Resection in 46 cases, amputation in 16, 6 of which were after previous resection.

3. *Hip-joint* 160 cases=12 per cent. of all tuberculous cases, and 16 per cent. of cases of bone-tuberculosis; under 16 years old 68 per cent.; Cured and improved 60 per cent.; died 19.4 per cent. Of the cases in children 24 were resected; in 1 exarticulation was performed.

4. *Elbow-joint* 86 cases=7 per cent. of all tuberculous cases, and 9 per cent. of cases of bone-tuberculosis; children under 16 years 36 per cent. Cured and improved 62 per cent.; died 11 per cent. In 8 cases the arm was amputated, and resection done in 28 cases.

5. *Bones of the hand* 76 cases=6 per cent. of cases, and 8 per cent. of cases of bone-tuberculosis; 26 per cent. in childhood, the cases of spina ventosa being eliminated. Cured and improved 68 per cent.; died 11 per cent. Resection was done in 11 cases, and amputation in 10.

6. *Vertebral column* 74 cases=5.7 per cent. of all cases, and 7.5 per cent. of cases of bone-tuberculosis; 43 per cent. in childhood. Cured and improved 58 per cent.; died 17.6 per cent.

7. *Tibia* 44 cases=3 per cent. of cases, and 4 per cent. of cases of bone-tuberculosis; 43 per cent. in childhood. Cured and improved 79.5 per cent.; died 4.5 per cent.

8. *Skull and bones of face* 40 cases=3 per cent. of cases, and 4 per cent. of cases of bone-tuberculosis; 37.5 per cent. in childhood. Cured and improved 80 per cent.; died 5 per cent.

9. *Pelvic bones and sacrum* 35 cases=2.7 per cent. of all cases, and 3.6 per cent. of bone-tuberculosis; 11 per cent. in children. Cured and improved 23 per cent.; died 46 per cent.

10. *Sternum and ribs* 35 cases=2.7 per cent. of all cases, and 3.6 per cent. of cases of bone-tuberculosis; 12.5 per cent. in children. Cured and improved 63 per cent.; died 11 per cent.

There was no case of caries of the clavicle.

11. *Femur* 19 cases=1.6 per cent. of all cases, and 1.9 of cases of bone-tuberculosis; 37 per cent. of the cases in children. Cured and improved 74 per cent.; died 5 per cent. Amputation in one case.

12. *Shoulder-joint* 15 cases=1 per cent. of all cases, and 1.5 per cent. of tuberculosis of bone; 22 per cent. of cases in children. Cured and improved 87 per cent.

13. *Ulna* 14 cases=1 per cent. of all tuberculous cases, and 1.4 per cent. of cases of bone-tuberculosis; 29 per cent. of the cases in children. Cured and improved 100 per cent.

14. *Humerus* 12 cases=almost 1 per cent. of all and of the cases of bone-tuberculosis; 17 per cent. in children. All cured.

15. *Radius* 7 cases=0.5 per cent. of all cases, and 0.7 per cent. of cases of bone tuberculosis; 1 per cent. in children. Cured and improved 86 per cent.; died 14 per cent.

16. *Fibula* 5 cases=0.4 per cent. of all, and 0.5 per cent. of cases of bone-tuberculosis; all in adults. Cured and improved 60 per cent.

17. *Patella* 1 case=0.08 per cent. of all cases, and 0.1 per cent. of cases of bone-tuberculosis. Cured.

II. *Tuberculosis of lymph glands*.—In all 196 cases=15 per cent. of all cases of tuberculosis; 31 per cent. in children. Cured and improved 79.5 per cent.; died 4 per cent.

III. *Tuberculosis of the skin and cellular tissue*.—In all 77 cases=6 per cent. of all cases; 34 per cent. in children. Cured and improved 74 per cent.; died 3 per cent. Contrary to Volkmann's experience, in the clinic at Würzburg tuberculosis of the skin was more frequent in adults than in children.

IV. *Tuberculosis of accessible mucous membranes*. In all 10 cases=0.8 per cent. of all cases; only 1 in childhood. Cured and improved 70 per cent.; died 20 per cent. There were two cases of tuberculosis of the tongue, 4 of tuberculous fistula ani, 1 tuberculous bursitis, 1 of tuberculous enteritis, and 1 of tuberculosis of the pharynx.

V. *Urogenital apparatus*.—In all 20 cases in males; 25 per cent. of these in boys. Cured and improved 65 per cent.; died 10 per cent. There were 18 cases of tuberculosis of the testicle, and 2 of tuberculosis of the kidney. Of the 18 with tuberculosis of the testicle 12 were castrated, 2 on both sides; of these 5 were children. The outcome of these cases is directly contrary to Volkmann's dictum that castration is of no use in children.—*Centralbl. für Chirurgie*, No. 8, 1888.

INTRALARYNGEAL AND INTRATRACHEAL THYROIDAL TUMORS.—DR. A. HEISE reports 3 cases of new growths composed of strumous thyroid glandular tissue, occurring within the interior of the larynx and trachea, in the Tübingen clinic since 1874. Ziemssen was perhaps the first to describe these tumors. He records, in 1875, a case occurring in a shoemaker 30 years old. This tumor was situated so as to compress the posterior wall of the trachea. The origin or histogenesis of these tumors is an interesting study. In the cases recorded in the Tübingen clinic the tumors were isolated from the thyroid gland, they caused no ulcer of the trachea; the mucous membrane was intact over their surface; they protruded into the lumen of the larynx or trachea, causing dyspnoea. The thyroid proper was little or not at all enlarged. These cases are, from a clinical standpoint, intralaryngeal or intratracheal struma. But it is to be also remarked that these growths cannot be classed among the malignant or benign growths of the thyroid projecting or compressing the larynx or trachea. They are rather accessory thyroid glands developing from an anomalous disposition of some embryonal thyroid tissue in foetal life. The tumor was situated, in the 3 cases of Bruns, on the posterior wall of the larynx and trachea. This situation is avoided by most other tumors of the larynx, as the papillomata. The tumors are not connected in any way with the cords.

In all four recorded cases the tumors were subglottic. In the cases of Bruns the tumors extended from the glottis to the extent of two to four tracheal rings. In Ziemssen's case the tumor began in the middle of the cricoid cartilage, extending downward for 2 cm. The above situation is a constant one. The surface of the tumors is smooth. In one case of Bruns the thyroid gland, though little enlarged, showed slight strumous changes. The tumors had a characteristic cylindrical form, with broad base. The dyspnoea was a gradually increasing one. The differential diagnosis concerns only benign growths situated below the glottis. There are infrequently papillomata or fibromata. The former are cauliflower in appearance and often multiple; the latter are small and sessile.

Adenomata have only been observed twice, and in both cases multiple. Enchondromata are somewhat more frequent. In all of the cases of Bruns the tumors were removed by extra-laryngeal interference (tracheotomy). The intralaryngeal methods are useless here. The dangers are hæmorrhage into the trachea. This may be obviated by the Trendelenburg tamponade. In incomplete narcosis the manipulation of the mucous membrane causes a disagreeable tendency to cough; this may be obviated by painting the surface of the trachea with a 2 per cent. solution of cocaine. The galvanic caustic apparatus was used in two cases, the scissors in one. In all cases the recovery was most satisfactory and complete.—*Beiträge zur klin. Chir. von P. Bruns, Tübingen, 1887. Annals of Surgery, April, 1888.*

SULPHUROUS INHALATIONS FOR PHTHISIS.—A series of observations has recently been made on a

method of treating pulmonary tuberculosis, which, if not curative, would appear to possess a beneficial power over the progress of this dread malady. The method consists in the systematic inhalation of an atmosphere impregnated with the fumes of sulphurous anhydride (SO_2); and several ingenious plans of obtaining a constant supply of the gas have been devised, the best of which is a lamp constructed to burn bisulphide of carbon. The simple plan of burning flowers of sulphur in a closed room can, however, be resorted to if desired. Under its influence, it is said, the expectoration becomes more liquid, the mucous surfaces are relieved from the irritation caused by the presence of muco-purulent secretions, and the patient is spared the fatigue of violent paroxysms of cough. In a certain number of favorable cases the improvement in the general health which follows is reported to be sufficient to allow of the cicatrization of cavities, and the subsidence of the more disquieting symptoms. The irritating effects of the vapor may be mitigated to some extent by burning opium and gum benzoin at the same time. Some two hundred observations have already been recorded, and the results have been sufficiently good to warrant a more general trial. Caution is advisable in the quantity of the gas, which should not exceed a certain proportion, which must be ascertained by close supervision of the patient during its administration.—*British Medical Journal, March 17, 1888.*

WHEN SHOULD ANTIPYRIN BE GIVEN.—Antipyrin should be administered with or immediately after a meal, otherwise pain, nausea, and discomfort may result from its contact with the walls of the stomach. The cutaneous manifestations which sometimes follow its ingestion are probably due to vaso-motor disturbances characterized by peripheral dilatation of the arterioles. In certain cases the rash has simulated that of scarlatina, with intense itching. There is every reason to suspect that in consequence of the present great demand for the drug, due care may not be employed in its manufacture, and it is suggested that an analysis should be ordered whenever toxic symptoms are observed. Dujardin-Beaumez claims to have detected a mixture of benzine in certain samples, the presence of which would explain many untoward effects. It should be borne in mind, especially by the public, that we have in antipyrin a useful but potent agent, the use of which in unskilled hands may and will in a certain proportion of cases give rise to severe and even fatal symptoms. Manufacturers would also do well to look a little more closely to the purity of the drug, otherwise it may fall into discredit.—*Medical Press, March 14, 1888.*

WEIL'S DISEASE.—A few years ago PROF. WEIL described a new infectious disease characterized by fever, headache, gastric disorder, jaundice, and pains in the muscles. In the *Deutsches Archiv für klin. Medicin* there have been four or five articles on the subject during the past five years, and in the current number Fiedler, of Dresden, records thirteen cases, and discusses fully the general characters and diag-

nosis of the disease. The onset of the affection is sudden, without prodromata, and often with a chill. The characteristic symptoms are those above mentioned. The fever runs a typical course, and lasts from eight to ten days. The liver and spleen are usually swollen, and the former is tender. Nephritis often occurs, and herpes and erythema have been present. The cases so far have been chiefly in men, and nine of Fiedler's patients were butchers. The prognosis is favorable. The cause of the disease is unknown, but the fact that dealers in meats form such a large proportion of the cases suggests the direction in which the poison is to be sought. Fiedler discusses the diagnosis, particularly from abortive typhoid, and concludes that it is an affection *sui generis*. It is quite possible that the affection may prove to be a form of chronic ptomaine poisoning.—*Medical News*, April 7, 1888.

CONTRAINDICATIONS AND DANGERS OF ANTIPYRIN.—ELOY calls attention to the unpleasant and sometimes dangerous effects of antipyrin, which he has collated from existing literature.

Nausea, vomiting, and gastro-intestinal disorders may result from the use of the drug. Syncope has occurred, and Bentzeff believes that the drug always causes this tendency. The opinions of Moncorvo and Dujardin-Beaumetz are quoted to show that the drug modifies the secretion of urine, and it is said that it closes or shuts up the kidneys. Barr has recently recorded a case of collapse and death following the administration of from gr. 15 to 30 in two doses. In one case of puerperal fever the drug caused a fall of more than 2.5° C., with vomiting and diarrhoea. Rigors then came on, the extremities became livid, and the patient died in syncope in 32 hours. An autopsy showed the spleen contracted, the kidneys shrunken and containing infarcts. [It appears, however, that Eloy has not made out his case against antipyrin. In the case of puerperal fever there is no evidence against the drug from the report of the autopsy. It is not fair to attribute every and any unfavorable turn in a case to the use of the drug last administered.]—*Revue Gén. de Clin. et de Thérap.*, March 1, 1888.

TECHNIQUE OF ERGOTININ INJECTIONS.—A. SCHÜCKING repeats his claim that injections of pure ergotin into the posterior or anterior lip of the uterus, is harmless, painless, and the best method of administering ergotin. The needle should be pushed about .2 to .4 inch into the tissue, and remain in place a few seconds. In erosions and hyperplasias of the glands of the portio vaginalis the injection of iodine or Fowler's solution has given him good results.—*Centralbl. für Gynäk.*, No. 8, 1888.

URETHRAL IRRIGATION IN GONORRHOEA.—PETERSEN thinks that the use of the syringe is the weakest point in the treatment of gonorrhoea, because the opening is so small that a moderate sized stream only can be used, coming in contact only with a part of the mucous membrane of the urethra, and because the amount of pressure used is left to the patient.

Petersen uses a urethral irrigator, and thinks it much better than the ordinary syringe.—*St. Petersburg med. Wochenschrift*, No. 37, 1887.

HYSTERICAL NEUROSIS IN A CHILD.—HELLMUTH reports the case of a girl, æt. 14, never menstruated, who had hallucinations of a religious character. There was extreme cutaneous anæsthesia. Under the use of chloral, paraldehyde, and dialysed iron and the following mixture the patient was cured in a few weeks.

Podophyllin	gram.
Ext. belladonna	aa 0.50
Ext. aloes-queous	1.50
Ext. tarax. q. s. sat.	

℞

25 pills. 2 pills morning and night.

—*Internat. klin. Rundschau*, No. 41, 1887.

DRAINAGE OF THE PERITONEAL CAVITY.—IN the Société de Chirurgie, on March 7, M. TERRIER reported seven successful cases of laparotomy in which drainage of the peritoneal cavity was used, without previous washing out of the cavity. MM. Bouilly and Terrillon, while they have no fear of drainage, think washing out better. *L'Union Médicale*, No. 33, 1888.

MR. ST. CLAIR BUXTON finds the following formula uniformly successful in curing tobacco amblyopia:

Liq. hydrarg. perchloridi (B. P.)	ʒss.
Potassii iodidi	gr. xij.
Aque destil.	ʒj.

To the above he adds for simultaneous administration the following pill:

Ext. nucis vomic.	gr. ss.
Ext. hyoscyami	gr. j.

Ft. pil. no. i. The pill of this strength is given three times a day, and with the solution.—*Lancet*, Feb. 25, 1888.

METHYLAL SUBCUTANEOUSLY IN DELIRIUM TREMENS.—KRAFFT-EBING, after using methylal subcutaneously in twenty-one cases of delirium tremens, finds that it is the best agent for producing sleep in this affection, especially if there is an anæmic condition of the nervous system. It is less valuable where there is hyperæmia.

OINTMENT FOR SCABIES.—LASSAR's ointment, published last week, should read:

Naphthol, grm. 5—10
Green soap
Precipitated chalk
Washed sulphur
Lanolin aa grm. 25.

—*Jour. Cutan. and Genito-Urinary Diseases*, February, 1888.

METHYLAL.—For the topical application of this new anodyne, the following is used:

Methylal	15 parts.
Ol. amygdal. expres	ʒ5

℞

—*Amer. Jour. of the Med. Sci.*, April, 1888.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, APRIL 21, 1888.

MERCURIC ALANINE IN SYPHILIS.

DR. R. DE LUCCA, Assistant in the Clinic of Prof. Ferrari in the University of Catania, has recently published, in *La Riforma Medica*, March 22 and 23, 1888, his results with alaninate of mercury (mercuric alanine). He was led to make the experiments with this compound after seeing Schmiedebarg's *Compendium der Pharmacologie*, in which it is stated that combinations of the oxide of mercury (HgO) with certain amidic acids of the fatty series (acetamide, glycocollamine, asparagine) should act well in the treatment of syphilis; and these preparations have the advantage of being very soluble and easily absorbed. Preliminary experiments on animals showed that mercuric alanine was not very toxic, and caused no local irritation when injected under the skin.

Alanine is α -amidopropionic acid, produced by the action of alcoholic ammonia on α -chloro- or α -bromopropionic acid, or by heating aldehyde ammonia with hydrocyanic acid and hydrochloric acids, the reactions being precisely similar to those by which glycine is obtained from the corresponding derivations of acetic acid. Alanine unites with acids, bases, and salts. It crystallizes in tufts of hard needles, dissolves in 5 parts of cold water, less easily in alcohol, and is insoluble in ether. When slowly heated it melts and sublimes undecomposed; but when quickly heated it is resolved into carbon dioxide and ethylamine. Nitrous acid converts it into lactic acid.

The alaninate of mercury used was prepared in the following manner: 1 part of alanine was dissolved in 20 parts of distilled water, which was then gradu-

ally raised to the boiling point; while the liquid was boiling it was poured over a small quantity of the oxide of mercury (HgO?) until it was all dissolved. Then the liquid was filtered and evaporated, the residue crystallized, and a whitish substance, mercuric alanine, was obtained, which under the microscope showed the characteristic needle-shaped crystals, grouped in crosses and tufts. When thus prepared alaninate of mercury is soluble in 3 volumes of cold distilled water; this aqueous solution is perfectly colorless, clear, is changed neither by exposure to air nor light, and will keep indefinitely. In dilute solution it will not coagulate albumen; in concentrated solution its coagulating action is limited to causing a cloudiness of that part of the liquid with which it comes in immediate contact. In other respects it has the general properties of other salts of mercury.

In practice De Luca used the drug in three different solutions, of 4, 8, and 10 mgrm. to 1 ccm. of distilled water (gr. $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{1}{5}$ to 16 m.), both for internal and hypodermic or intermuscular use. It was used by injection in 20 cases (adults); 19 cured, one improved. The quantity used daily on each patient was from 5 to 10 milligrams ($\frac{1}{16}$ to $\frac{1}{5}$ gr.). The average number of days of treatment for each patient was 37.05 days; average number of injections to each patient 27.7; average age of patients 23.2 years. In the case of improvement that was not cured the patient stopped treatment. All the cases were those of secondary syphilitic lesions. The average quantity of the drug used was 228 mgrm. (3.5 gr.) to the patient. Suppuration at the site of injection occurred only 3 times out of all injections, .53 per cent. As regards the duration of treatment, then, mercuric alanine has a slight advantage over the bichloride; as to quantity, it has a decided advantage, being about as 22.8 to 42. As to the efficacy of the alaninate, in 12 cases (out of the 20) that could be seen to find if any recurrence had taken place, there was only 1 recurrence, in a case of syphilitic papule of the larynx. From this it seems that the alaninate gives more permanent results than other mercurial preparations. Further, in not a single case in which the drug was used by injection was any stomatitis or other unpleasant effect produced.

From a tabulated statement of 20 cases treated by the internal use of the drug, it is seen that for the cure of 10 adults, with secondary syphilis, there was an average of 45.4 days and 641 mgrm. (9.9 gr.) of mercuric alaninate to the patient. Of 10 children treated 1 died on third day. For the cure of

9 children, average age 7.4 months, with hereditary or acquired syphilis, each required an average of 54.6 days and 159 mgrm. (2.45 gr.) Of these cases 6 were seen in from 8 to 9 months after treatment, and there was no recurrence in any one. There was not a single case of stomatitis, and there was only 1 case of intolerance to the drug on the part of the stomach, which was completely controlled by the administration of cocaine. As regards the internal use of the alaninate, then, it is not to be preferred to the tannate or the phenate in the opinion of De Luca, but the easy tolerance of the drug and the excellent manner in which it acts on the syphilis of infants make it an important addition to the list of antisypilitics. The child that died was only 2 months old, and was in a desperate state when it came under treatment. De Luca claims that the decidedly calmative action of the drug gives an especially happy effect in infants.

While 40 cases may be considered a small number from which to draw conclusions, the good results obtained by De Luca show that this preparation of mercury is one well worth trying. Possibly it may be found that it will give good results in the late manifestations of syphilis.

TIGHT LACING AND GALL-STONES.

The advocates of female dress reform and the enemies of the corset will be pleased to know that there is a causal connection between tight lacing and gall-stones. At least, so says PROFESSOR F. MARCHAND, of Marburg, in the *Deutsche medicinische Wochenschrift*, of March 22, 1888. One may be easily convinced, he says, that gall-stones and lacing-furrows of the liver are very frequently coincident, and when the situation of the lacing-furrows are observed with reference to the gall-ducts on a preparation, the whole matter becomes quite clear. As a rule the course of the lacing-furrow is obliquely across the right lobe of the liver, from which there is a tendency to atrophy, of various degrees, in the region of the gall-bladder. In the higher degrees, in which a true lacing-lobe is formed, the gall-bladder remains entirely on this part of the right lobe, and the thinned portion of the liver is just at the region of the neck of the gall-bladder and of the cystic duct. It is not infrequent, in such cases, to find the gall-bladder tightly distended, and extending far beyond the border of the liver, and in these gall-bladders stones are frequently found.

Of course, there is some question as to whether we have to deal in these cases with a striking and fre-

quent coincidence, or with a true causal relation. The first is not impossible, since both lacing-furrows and gall-stones are of frequent occurrence, and both are frequent in the female sex. Stagnation has been held to be one of the most important causes of gall-stone formation, though it is extremely probable that there is also a chemical change in the composition of the bile that plays an important part. Anything that may cause thickening of the bile, occlusion of the bile-passages, faulty evacuation, especially when the bile is thick and rich in solid matters, leads to the formation of nuclei, upon which stones are easily formed. Anything that exerts pressure on the bile-passages, especially on the cystic duct, may be considered as favoring the formation of biliary calculi. Pressure upon the border of the ribs may exert such influence. It is known that sedentary habits predispose to some degree to gall-stone.

In the case of tight lacing the pressure of the border of the ribs upon the liver acts continuously only during the day. At night there is no pressure, or much less, and then only when the tight lacing has changed the form of the thorax. This intermittent pressure, Marchand claims, actually favors stagnation of bile and the formation of concretions in the gall-bladder; it becomes distended during the day, and cannot empty itself completely at night. And, in Marchand's opinion, the first and most frequent cause of the formation of gall-stones is of a mechanical nature; and in the numerous cases that occur in women he thinks that the mechanical factor is tight lacing. And not only cases of calculi of the gall-bladder, but many cases of cancer of this viscus may be attributed, he thinks, to tight lacing, and he illustrates the manner in which the liver is pressed into by two cuts from actual preparations of cancer of the liver with biliary calculi.

It is probable that Marchand's theory is applicable to many cases of gall-stone, and some cases of cancer of the liver, in women. The deformity of the liver that is sometimes produced by the pressure of corsets and stays is a matter that almost any pathologist of large experience can testify to; and the surgical world was but a short time ago astonished to learn that Langenbuch had excised a third lobe of the liver, caused by excessive pressure.

COLLECTIVE INVESTIGATION OF SYPHILIS.

PROFESSOR KÖBNER, of Berlin, Chairman of the Committee of the *Deutsche Naturforscher und Aerzte*, has issued a circular asking for information

regarding syphilis and the methods of treating it. The circular states that the statistical publications from institutions and private observers regarding syphilis and the different methods of treating it are faulty because they contain many sources of error that cannot be properly eliminated, and because of the great inadequacy of the material published, since they deal only with the treatment of certain syphilitic symptoms, without regard to the different syphilitic individuals, though the great influence of individuality on the natural course of syphilis, uninfluenced by therapy, is recognized by all. On account of this one-sided method of making and recording observations there still remain many points in the pathology and especially the treatment of syphilis, as regarding the relations of syphilis to other diseases, for which thousands of cases might be utilized. Furthermore, it is important, for purposes of comparison, to know how other diseases, such as scrofulosis, tuberculosis, etc., are affected by the complication of syphilis and the methods of treating it. Such an investigation, well carried out, can scarcely prove otherwise than valuable.

A FASTER OF THE 16TH CENTURY.—A recent number of the *Archives de Neurologie* publishes a report of Bucoldianus and others on a wonderful fasting girl whom the Emperor Ferdinand visited in 1542. This girl, 12 years of age, took neither food nor drink for a year, the report says, and learned men were at their wits' ends to account for the marvelous fast. In Hufeland's "Makrobiotik" is an account from the *Historie de l'Académie Française*, of 1769, of a case in which an insane officer took no food for 46 days. He drank only water with a few drops of brandy in it, and during the last 8 days no water. After the 36th day he was unable to stand. On the 46th day he saw a child with a piece of buttered bread, when he began to eat, and soon recovered.

DR. C. R. AGNEW.—We regret to learn from the daily papers that Dr. C. R. Agnew, of New York, is suffering from a severe attack of perityphlitis, and that there are doubts of his recovery. Dr. Sands performed laparotomy on him last week, but though some pus was evacuated the condition of the patient is very unfavorable at last accounts.

A NEW CULTURE FLUID.—APOTHECARY JAMES KUNZ, of Bern, exhibited to the Medico Pharmaceu- tical Society of Bern, on Dec. 6, 1887, a culture-

fluid that has the advantage of containing no pepsine, the presence of which renders the examination of bacterial cultures for ptomaines so difficult. The fluid is colorless, so that the growth of microbes may be very easily observed. It is prepared by the diges- tion of albumen, ox pancreas, and water.

TRAINING SCHOOL FOR NURSES IN LOWELL.—From the *Annual Report of the Lowell Hospital As- sociation*, January 1, 1888, we learn that a training school for nurses has been established in the Hos- pital, and that a course of twenty-four lectures on nursing was provided for the past winter.

A BUILDING FOR THE BERLIN SOCIETIES.—A plan is on foot in Berlin to construct a large building for the scientific societies of the city. Most of the de- tails have been arranged.

PROFESSOR DONDERS has recently celebrated the 50th anniversary of his Professorship in the Uni- versity of Utrecht.

ASSOCIATION ITEMS.

THIRTY-NINTH ANNUAL MEETING.

To be held in Cincinnati, Ohio. May 8, 9, 10 and 11, 1888.

PRESIDENT, A. Y. P. GARNETT, M. D.,
of Washington, D. C.

PAFERS AND DISCUSSIONS.

The following additional titles of papers to be read at the approaching meeting have been received since the programme was published in the issues of THE JOURNAL for April 7 and 14:

Section on State Medicine.

On Thursday.—b. "What Evidence is there For or Against a Malarial Germ?" by Samuel N. Nelson, Boston.

Section on Practical Medicine, Therapeutics and Physiology.

"Etiology of Typhoid Fever." by V. C. Vaughan, Ann Arbor, Mich.

"On Headache from Overlooked Causes in the Naso-pharynx and Ears, by Henry Gradle, Chicago.

Section on Medical Jurisprudence.

"Points Touching the Medical Jurisprudence of Alcoholic Inebriety," by S. L. Wright, Bellefontaine, O.

Section on Ophthalmology, Otology and Laryngology.

"Some Observations on the Extraction of Cataract without an Iridectomy, and the Use of the Band-

age in the After-treatment," by Geo. E. Frothingham, of Ann Arbor.

"Further Remarks on the Necessity for Reform in the Manner of Designating Lenses," by Dudley S. Reynolds, of Louisville.

"Fatty Tumors of the Orbit," by Jas. H. Buckner, of Cincinnati.

"A Case of Atrophy of the Bulbs of the Supercilia and Cilia, Associated with Atrophy of all the Fingernails, Microscopic Specimens of Cilia and Supercilia, and Cast of Fingers," by R. Tilley, of Chicago.

"Passive Motion in the Diagnosis and Treatment of Middle-Ear Affections, with a New Otoscope (Pneumatic)," by S. S. Bishop, of Chicago.

"The Tonsils as a Cause of Naso-Pharyngeal and Aural Disorders," by H. Gradle, of Chicago.

"Tonsillotomy, with a New Tonsillotome," by S. S. Bishop, of Chicago.

Section on Dermatology and Syphilography.

Chairman—L. Duncan Bulkley, New York.

Secretary—Fayette Dunlap, Danville, Ky.

FIRST DAY.

Address by the Chairman, "Syphilis as a Non-venereal Disease."

Discussion on "The Etiology and Treatment of Eczema," opened by Dr. Bulkley, or another.

"Nervous Causation of Eczema," by E. Cheney, Boston.

"A Clinical Study on the So-called 'Prairie Itch,' 'Lumberman's Itch,' etc., with a Consideration as to its Entity," by W. T. Corlett, Cleveland, O.

"Two Cases of Pityriasis Rubra (primary exfoliative dermatitis)," by Frank Woodbury, Philadelphia.

SECOND DAY.

Discussion on "The Limit of the Period during which Syphilis can be Communicated by Contagion or Inheritance," opened by L. B. Bangs, New York.

"Double Chancre à distance; an Inquiry into Syphilitic Autoinoculation," by A. H. Ohman-Dumesnil, St. Louis.

"The Importance of Local Treatment in Syphilis," by Joseph Zeisler, Chicago.

THIRD DAY.

"Tuberculosis Cutis, with Report of a Case," by George T. Elliott, New York.

"Clinical Remarks on Perforating Ulcer of the Foot," by John A. Wessinger, Howell, Mich.

"The Use of Arsenic in Dermatology," by B. M. Ricketts.

"On the Value of frequently repeated Doses of Arsenic in the Treatment of Bullous Diseases of the Skin, especially in Children," by L. Duncan Bulkley, New York.

RAILWAY ARRANGEMENTS.

Attention is called to the advertisement of the Monon Route on the inside back cover of this issue of THE JOURNAL. This line has arranged to furnish physicians and their friends with the best in the land, and no one making one of this special party will regret having made the trip.

SOCIETY PROCEEDINGS.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, March 7, 1888.

THE PRESIDENT, S. WEIR MITCHELL, M.D., IN THE CHAIR.

DR. JOHN ASHHURST reported a case of

SUCCESSFUL SIMULTANEOUS TRIPLE AMPUTATION FOR RAILWAY INJURY.

(See THE JOURNAL of April 14, page 462.)

DR. WILLIAM HUNT said: Dr. Ashhurst has dwelt upon the importance of saving time. There is one way in which time might be saved, and that is by more than one surgeon operating at the same time. Dr. Morton and I have done that on two occasions, each taking a limb and operating at the same time. I do not know how it would work with three.

DR. H. C. WOOD said: I should like to make a remark with reference to this point of keeping up the animal heat. Many people die in acute disease, in acute poisoning, and after severe operations, because the temperature is not maintained. I have proven by experiment that if two animals are subjected to severe injury, and one is kept in a moderately cool room, and the other in a hot room, the one will die, and the other recover. In this connection, I will repeat a suggestion made to me by Dr. Dercum, which would afford one of the most efficient measures for maintaining temperature—and that is, to fill the ordinary water-bed with hot water, and allow the patient to lie on it.

DR. CARR, of Washington, said: I did not know until I heard the remarks of Dr. Ashhurst the importance of a case that I have had. I have performed a quadruple amputation for frost-bite. The patient was brought into the hospital in a condition of collapse with the four extremities frozen. He reacted well, and remained in the hospital a week, when his constitutional condition became serious, and after consultation it was decided that amputation of the four extremities was desirable. I operated, removing one foot above the ankle, the other foot through the metatarsal joint, one forearm about its middle, and one hand, leaving a small stump of the thumb, disarticulating it at the metacarpophalangeal articulation. The patient did very well.

In operating I secured the vessels with hæmorrhagic forceps, and left the stump in that condition while I proceeded to amputate another limb.

DR. J. WILLIAM WHITE said: I understood from Dr. Ashhurst's paper that in his classification of triple amputations partial amputations were not included. I had last year at the University Hospital a double knee-joint amputation, with amputation of a portion of one hand, leaving the thumb and one finger, and should have been glad to present the patient this evening.

In reference to the technique, I have only one or two suggestions to make. If the irrigation is done with warm or hot water, it does not necessarily re-

duce the temperature, and, in fact, may aid in keeping up the bodily heat. The same is true with reference to the use of wet towels, which can be wrung out of hot water and frequently renewed. Bramann, assistant to von Bergmann, has recently detailed the results obtained at the latter's clinic by packing wounds with iodoform gauze. This prevents the formation of a blood-clot, which is perhaps, next to a failure to secure asepsis, the most important cause of the failure to obtain primary union. Where there is danger of oozing, he packs the wound with iodoform gauze, which is allowed to remain from forty-eight to seventy-two hours. It is then removed and the sutures applied; in the vast majority of cases union by first intention is secured. Even when it was left *in situ* for from four to six days such union occurred after suturing. In a case of double or triple amputation time might be saved by packing the first operative wound with iodoform gauze as soon as the vessels are secured, and then dressing it. This could be done by an assistant, and the patient removed to the ward much sooner than if time were taken to introduce stitches. The suturing could be done any time during the next two or three days.

DR. MITCHELL said: I have listened with a great deal of pleasure to the remarks as to the temperature of patients under ether or chloroform, and the possible influence of irrigation upon these cases.

I would like to ask what some of the gynecological operators would say. In their cases the abdomen is sometimes largely opened, and the intestines exposed; if irrigation lowers the temperature in ordinary surgical cases, how much more should it do so in these?

I think it would be advisable to have a series of experiments and observations as to the effects of ether, chloroform, and perhaps other anesthetics, upon the temperature, when used for long periods. As concerns the interesting case of triple amputation shown us by Professor Ashhurst, I would like to say that no physiological statement has been made, so far as I know, as to the effect of large losses of tissue upon the pulse, temperature, nutrition, blood-pressure, amount of urine, etc. A tempting subject here awaits some industrious observer.

DR. WHITE said: Experiments are now being made at the University of Pennsylvania, upon animals and clinical subjects, to determine the effect of the administration of ether on the bodily temperature, and seem clearly to indicate that a drop of from one to three degrees may be expected, not only in cases where no irrigation was used, but even where no operation of any sort has been performed.

The note of a case has just been handed to me, in which the temperature fell four degrees. The temperature before operation was 99.5°, and after operation (which was the removal of a tubercular testicle) it was 95°. No irrigation was employed. No general symptoms of shock, such as weakness or failure of the pulse, leakage of the skin, or shallowness of respiration, were observed in this case. A series of nine cases of all sorts of operations gave

similar results, though the average reduction of temperature was not more than two or three degrees.

DR. WILLIAM GOODELL said: In removing the ovaries, one has to be very cautious on account of the collapse that may occur if the ovary is pinched or roughly handled. Something similar, I fancy, would occur in the removal of the testicle, and this, I think, had a good deal to do with the fall of the temperature noted.

DR. ASHHURST said: The suggestion made by Dr. Hunt is an old one. Before the days of anesthesia it was thought that the patient might suffer less pain by having both operations done at once; but, when the patient is insensible, there will certainly be less confusion by having only one done at a time.

With reference to irrigation, as I have already mentioned, I have seen the temperature fall as low as 97° after a simple operation, and in operations not usually considered capital, such as the removal of the breast, the temperature has gone even lower, and the patient has remained in an extremely critical condition for hours. This has been where there has been no loss of blood, and no condition other than the irrigation to account for it. In cases where antiseptic measures have not been employed, I have not seen this depression, except when there has been great loss of blood, or unnecessary exposure of the patient.

In my list I have not included any but synchronous major operations. The cases reported to-night seem to have been instances of minor amputation, as regards some of the parts removed, and can, therefore, technically be looked upon as only double, not triple or quadruple amputations.

Another word with reference to irrigation; even if warm solutions be employed, they will tend to cool the body by evaporation, and the same is true with regard to wet towels; even if hot when applied, they will reduce the temperature unless covered with oiled silk, to prevent evaporation. I do not think that the administration of ether alone has much effect upon the temperature, but under any circumstances we can better dispense with irrigation and wet towels than with anesthetics.

In regard to the case of excision of the testis, which has been mentioned, it may be said that operations on the testicle necessarily require considerable exposure of the lower part of the abdomen. It is also a well-known fact, that division of the cord is often followed by profound shock. This observation has been made by Mr. Erichsen, at the University College Hospital, London, and my own experience confirms it. The moment that the cord is divided, the pulse fails decidedly, and there is more shock from removal of the testicle than from any other operation of equal gravity in the whole range of surgery.

I have no objections to the antiseptic method of treatment, and I am in the habit of employing it, but I think we should not close our eyes to the fact that it may have some disadvantages. I think that the maintenance of the patient's temperature is of more importance than the exclusion of a few

microbes. All that can be accomplished by irrigation can be equally accomplished by washing the part before and after the operation, care being taken to keep the patient warm and dry. The ordinary antiseptic dressings were employed in this case after the operations; I consider that their chief advantage is that they permit infrequent dressing of the wound.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, December 14, 1887.

THE VICE-PRESIDENT, D. S. LAMB, M.D.,
IN THE CHAIR.

DR. LACHLAN TYLER presented a specimen, and read the history of several cases of

RUPTURE OF ANEURISM OF THE AORTA.

Case 1.—On November 7th last, I made an autopsy of the body of a colored man, R. M., about 40 years of age, who had received medical attendance at the Freedmen's Hospital fifteen days previous to death, but had consulted no physician subsequently. He was reported to have suffered intense agony for several days, and especially hours immediately before death, the pain complained of being located in the abdomen, left side, and in the lower part of the back. I found death to have resulted from the rupture of an aneurismal enlargement of the abdominal aorta. The intestines and peritoneal replications were flecked with clotted blood, which was, however, collected principally at a point of rupture just above the bifurcation of the aorta, and then formed an intricata hæmatoma in the meshes of the surrounding cellular tissue.

Case 2.—On December 1st last, in an autopsy of the body of a white man, R. C., 38 years of age, I found that his death had been caused by rupture of the left auricle of the heart. The history of the case was to the effect that he had been accidentally run over by a dirt-cart, and died in a few minutes afterwards. No external mark of injury was observed, but upon opening the thorax the middle segment of the sternum (gladiolus) was discovered to have been fractured. The theory accepted was that the heart had been compressed between the racilient breast-bone and the spinal column forcibly enough to cause rupture.

Case 3.—On December 10, 1887, I made the post-mortem examination in the case of the colored man from whose thoracic cavity the specimen which you see here was extracted. He was about 50 years of age. I learned that he was a carpenter by trade and had left his home in the morning to go to work as usual, when he was suddenly stricken by death a block or two away. You will observe an aneurismal enlargement of the aorta with a stellated rupture within the line of attachment of the pericardium. The pericardial sac was filled with clotted blood and serum.

The man had experienced no dysphagia, but fre-

quently complained of pain beneath the left shoulder-blade, and also dyspnoea upon much exertion; his feet and ankles had occasionally become cedematous. No alteration had ever occurred in the voice. Rheumatism had been complained of, but the joints had never been enlarged, and he had never been confined to bed from the disease. All the viscera according to gross appearances were in a normal condition.

DR. REYBURN thought it rare to find rupture without hypertrophy or any lesion of the heart.

DR. BRYAN saw a case several years ago when attached to the U. S. S. Powhattan, in a sailor, aged 40, stout, and round shouldered; had enlisted on account of dissipated habits. Being a sail-maker, he was compelled to bend forward most of the time while at work. Dr. B. was called to see the patient one evening about 10 o'clock, and found him suffering from hæmoptosis. Patient said he had felt perfectly well during the day; had "turned in" about the usual hour, and fallen into a sound slumber from which he was suddenly aroused by a feeling of oppression in the chest; the dyspnoea increased, and his mouth was filled with a salty fluid which he at first spat out, but which later on spurted out of his mouth. It was impossible to estimate accurately the quantity of blood, but it was thought to be over an ounce. A thorough examination of the chest was made the following day, and the heart sounds found to be normal; all over the anterior and posterior surface of the left chest from near the apex to the base numerous large and fine moist rales were heard. The percussion note was not perceptibly changed. Four days after the first attack, in disobedience to strict orders, he made some undue exertion, followed by a sensation of something giving away in his chest, and almost immediately a large quantity of frothy blood spurted out of his mouth. This hæmorrhage was alarmingly profuse—the quantity of blood lost being much greater than at the first attack. The patient rallied and rapidly regained his strength under treatment. The chest was frequently examined but nothing could be found to account for such a profuse hæmorrhage. Two months after the second attack, being called to the patient's cot, found him bleeding profusely. This time the blood was vomited, was dark and grumous at first but soon changed to normal red color. He complained of great distress in the epigastrium. Then suddenly ceased vomiting and went into collapse, dying in about one hour after the doctor was called.

The following is the result of the autopsy so far as it relates to the aneurisms: *Thorax.*—On removing sternum there was found to be a large deposit of fat on the pericardium; a small quantity of serum was found in the pericardial sac and the pleural cavities; the lungs were easily removed from the thoracic cavity; were free from adhesions, except the left which was attached by the posterior surface of the apex to the arch of the aorta and the junction of its adhesive and descending portions. On section the right lung presented a slight pigmentation, otherwise normal. The left was the seat of an intense pigmentation from apex to base. Removing the left lung

from the thoracic cavity it was detached from the arch of the aorta, and a large blood-clot was turned out of a cavity found in the posterior border just below the apex, the clot remaining adherent to the aorta. The cavity was large enough to lodge an English walnut and was found to communicate with several bronchi. The heart was next removed with the aorta attached as far down as the twelfth dorsal vertebrae. The left ventricle was slightly hypertrophied, and there were a few fibrinous clots on the aortic valves. The aorta was next laid open and in its course were found two aneurisms: one at the termination of the transverse portion of the arch which was filled with a firmly organized blood-clot; the second aneurism was situated lower in the course of the aorta, opposite the fourth dorsal vertebrae the body of which was crowded down to its center. At this point the aorta was adherent to the œsophagus, and communicated with it by a small opening. Where the tumor pressed on the œsophagus there was a large gangrenous ulcer, and it was through this that the blood forced its way into the œsophagus. At the time of the autopsy the aneurism was empty. The walls of the aorta were much thickened and the internal surface was rough, presenting numerous small elevations and depressions for some distance down its thoracic portion. There were numerous small ulcerations in some of which fibrinous deposits were found. The stomach when opened was found to contain 572 c.c. of blood.

This case is of interest from the fact that the early symptoms were latent, which rendered a diagnosis impossible. The case will be found reported in full in the *Proceedings of the Naval Medical Society*, No. 5, Vol. I.

DR. A. F. A. KING: It is remarkable that so many of these cases are latent. In some there are no symptoms that would lead us to suspect such a grave affection. He could recall the case of a former member of this Society who died from the sudden rupture of an aneurism. He had been complaining for a long time but aneurism had escaped suspicion. He made an appointment to see Dr. Donaldson, of Baltimore, but that morning, about 9 o'clock, while lying on his bed there was a sudden gush of blood from his mouth; he called to his servant to help him, but before assistance arrived he died. The true nature of the case was obscured by the laryngeal symptoms, which is often the case.

DR. TYLER saw a case several months ago in a man 50 years old. Physicians had treated him for laryngeal trouble as there was almost complete loss of voice. He suffered for a year, and then went to the seashore where he derived much benefit. Last summer he was very much better, and the diagnosis was made the day before his death. He could not say that the information that he had an aneurism killed him but he died the day after he was told and it may have hastened it.

DR. FREIDRICH presented a

CASE OF THE VAGINA PASSED AFTER THE USE OF A CONE CALLED "ORANGE BLOSSOM."

DR. BUSEY would like someone to get one of these

cones and have it examined. Several ladies had come to him to ask if they could use them for various uterine ailments. The Society should investigate the nature of this remedy in order to stop its use if it is such a powerful astringent and fraught with such dangers. It is being extensively advertised by female agents.

DR. LAMB had submitted a cone to Dr. Gray, of the museum, for microscopic examination but he had failed to detect its constituents.

DR. BUSEY had never seen such a vaginal desquamation. He had seen flakes and coagulated secretions, but this specimen seemed to be a cast of the entire vagina.

DR. C. W. RICHARDSON read a paper on

A CASE OF LARYNGEAL GROWTH.

(See page 481.)

In answer to Dr. Bermann as to the size of the tumor, Dr. Richardson said that it was about one-half inch long.

DR. BERMANN said that that explained the difficulty in finding it. His method is to quiet the patient and then seize the tumor during violent expiration. He uses Störck's instrument, which pleases him better than that exhibited by Dr. Richardson. The growth can be got through the guillotine.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

THE VICE-PRESIDENT, W. W. KEEN, M.D., IN THE CHAIR.

Stated Meeting, March 14, 1888.

DR. CHAS. HERMON THOMAS read a paper on GRADUATED TENOTOMY IN THE TREATMENT OF INSUFFICIENCIES OF THE OCULAR MUSCLES. (STEVENS' OPERATION.)

(See page 485.)

DR. H. T. HANSELL: I would like to ask Dr. Thomas for a more definite statement as to the means of diagnosis. To my mind these are not at all satisfactory. The recognition and the exact determination of superior and inferior insufficiencies are very difficult, much more so than of lateral defects.

DR. B. ALLEN RANDALL: I have for years taken great interest in the subject of muscular insufficiency, the more so because I have myself been troubled with a defect of the kind, which Dr. Risley corrected for me ten years ago; and with his kind aid, and independently, I have been studying the matter since. As to diagnosis, much has been written, sometimes pretty wide of the mark; and I cannot see that Dr. Stevens has improved our methods. He has brought forward a very nice set of terms for what we have long known, and he has expressed clear-cut opinions which read well. In the same way, Landolt makes out very pretty graphic charts of cases, and marks out well-defined groups, which are to be treated according to certain rules. But the cases which I meet in practice refuse very often to be included in such

categories, and very dissimilar cases afford discouragingly similar charts.

I understand from Dr. Thomas' paper that the estimation of defects is largely made with a distant object, presumably a light at twenty feet. To do this we must know the refraction and the accommodation, and I suppose that these are investigated as a matter of course. But it is not safe to take the accommodation for granted. I can myself change my exophoria to apparent esophoria by the accommodative effort, so-called; and every patient may as readily do the same.

As to correction by operation. I cannot speak, like Dr. Thomas, from personal experience. We all know that when a certain degree of error is reached it is necessary to operate, and Dr. Stevens places that point very low. His method of operating is highly praised as a delicate one, but the necessity of dividing the operation into many steps is rather unfortunate. However, if he can thus relieve epilepsy, that minor disadvantage may be overlooked. It may be said in conclusion, that except in pointing out that *hyperphoria* is a frequent cause of perplexing and irregular insufficiencies of the lateral muscles (?), Dr. Stevens has added little to our knowledge of the nature of these affections; that in his claims as to their importance, he has gone much further than the experience of equally competent and diligent investigators has enabled them to confirm him; and that in his operative treatment he has merely developed a refinement of the partial tenotomy long in use, as the only means of correcting without overdoing it, the minute deviations from the perfect balance which he deems worthy of operative interference.

DR. THOMAS: Lack of time prevented me from treating at length in the paper of the points as to diagnosis which have been made the subject of questions. There is a variability, and yet, after all, a certainty in these tests which comes as the result of practice and observation. There is an irregularity in the results of the tests from day to day, but after getting the extreme limits of the swing and studying all the circumstances of the case, one is able to strike an average which very fairly represents the error to be corrected. Then a prism is temporarily adjusted to compensate for this error; and thus we make a crucial experiment and are further guided by the effects obtained. A lighted candle at twenty feet, and the dot and line of von Gräfe at reading distance, are *both* to be employed as test objects, and a comparative study should be made of the results obtained—both in the absence and in the presence of accommodation. In this way we frequently get important clues. Sometimes anomalies appear in the action of the lateral muscles comparing the tests at reading distance with those at twenty feet; and when great erraticism of this sort is shown, we may be pretty sure in the majority of cases that we shall in the end find a manifested hyperphoria. Unfortunately, there is no known analogue of the mydriatics which we can well use in these cases, and yet with great patience and watchfulness we shall usually succeed. My results are hopeful in epilepsy, but my operations are too recent to speak positively of cure.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Rotary Lateral Curvature of the Spine; its Present Status.

At the March meeting of the Orthopædic Section of the Academy of Medicine there was an interesting discussion on the *Treatment of Rotary Lateral Curvature of the Spine*, in which it was apparent that the dependence on steel supports formerly so universal has to a large extent been abandoned, and that the methods of Mr. Bernard Roth, of London, as described in his valuable and suggestive article on lateral spinal curvature in Heath's Dictionary of Surgery, the principles of which have for several years been advocated here by Dr. Lewis A. Sayre, are being received with no little favor by our American orthopædists. Very deep regret was felt at the absence on this occasion of Professor Sayre, who is the Chairman of the Section; but he was ably represented by his two sons, who have already won an enviable distinction in the department of surgery which his achievements have so long and so brilliantly adorned.

The paper of the evening was by Dr. Samuel Ketch, and its title was, *The Present Status of the Treatment of Rotary Lateral Curvature of the Spine*. By this condition he said he wished to be understood as meaning that lateral deviation of a portion or the whole of the vertebral column which shows as its most constant factor the rotation, torsion or twisting of the bodies or segments of the bodies of the vertebrae, with accompanying or consecutive alterations in the shape of the thorax. No deformity, he thought, exhibited in its slow, insidious progression, its involvement of area, its secondary effects on important external organs, so decided alterations of form and such marked disturbances of function as this. When it became recognized that the condition we had to deal with was but the effect of some cause, some irritation, in fact, the exact nature of which was as yet unknown, it would be seen that the problem of treatment embraced something more than the attempt to remove the mechanical results of such cause by the use of opposing mechanical means.

The present treatment of the disease, he went on to say, consisted principally of two methods, or a combination of the two, viz.: by apparatus and by exercises, or by the combined use of the two. Having stated that he did not think it necessary to speak in detail of the treatment by complete recumbency or that by cutting of spinal muscles (tenotomy), both of which might be useful adjuncts at times, he referred to the apparatus now used as being of two varieties, progressive and fixative. He strongly condemned treatment by the constant action of cumbersome and heavy instruments which, by their abnormal pressure, often gave rise to large excoriations, and even sloughs, of the skin. In his opinion, no lever brace should be used for any other purpose than simply that of retaining the spine in an improved posi-

tion, previously obtained either by appropriate manual exercises or combined manual and gymnastic movements. Such braces should be light, easily movable, to allow of inspection of the parts, and simple enough to be easily applied by those having the home care of the case. The second class, or fixation apparatus, were originally constructed with the idea of firmly immobilizing the distorted spine in an improved position, obtained by suspending or extending the patient. This original plan had been modified to the extent of opening the brace in front, whether constructed of plaster of Paris, poroplastic felt, leather, or other material, with the object of easy removal, in order to allow proper exercises, and give attention to the subjacent parts.

In regard to the matter of exercises he said that he attached most importance to those which had for their object the "unfolding" of the twisted vertebral column. These could be applied with the greatest precision and benefit by means of the surgeon's hands, and no appliance could rival the ease, proper application of pressure, and safety which such exercises afforded. Their success, however, depended on detail, and they should always, therefore, be given either by the surgeon himself or a thoroughly trained assistant.

As to the matter of a cure, in his opinion this involved not only the restoration of the lateral deviation, with its normal curves, but also the disappearance of that most constant feature of the deformity, the rotation. As generally understood, however, a cure implied only the prevention of further deformity or an amelioration of the condition originally observed. In the cases observed by him he had never been able to convince himself of the entire disappearance of rotation; while he believed it to be essential that this symptom should be prevented or removed before a vertebræ could be considered as restored to a perfectly normal state. It was in the direction of prevention that he thought the most signal success could be achieved; and it was only by the earliest recognition of the symptoms and an appreciation of their importance that prophylaxis could be accomplished.

In a paper on lateral curvature which Dr. Ketch read before the Section two years ago, which was based on 229 typical cases presenting the deformity in question, he had made three divisions of cases: *first*, those in which the deformity was first observed from the first to the twelfth year, or during the age of childhood; *second*, those in which it was first observed from the twelfth to the eighteenth year, or during the age of puberty; and *third*, those in which it was first observed after the eighteenth year, or during the age of complete development. During the period of childhood the deformity occurred in 120 cases, or over one-half of the whole number, and among the conclusions at which he arrived in the paper were the following:

1. Rotary lateral curvature is principally a disease of childhood, and may be either congenital or acquired.

2. The disease should be looked for early in life, and as a factor in early treatment the careful inspec-

tion of children's spines becomes most important towards the prevention of deformity.

He did not mean to say that, even were the spines of young children to receive the utmost care, and at the first suspicion of deformity the child were taken to a surgeon, that we should not have lateral curvatures; but he felt convinced that the inveterate deformities now seen in so large a number would be few and far between.

Dr. Phelps thought that in lateral curvature, if there were changes in the bone, no apparatus or gymnastic exercises would cure the deformity; but at the same time it was of advantage to suspend the patient and, having got him into the best position, to secure this permanently by some fixed apparatus. Stillman's brace was probably the most satisfactory steel instrument that has as yet been devised; but so far as his experience went, the plaster of Paris jacket had proved by far the best appliance at the command of the surgeon.

Dr. A. B. Judson said that he had an aversion to using mechanical support in lateral curvature, and he did not know that he had ever seen a case in which he had found mechanical pressure do any good. In many cases it would be likely to increase the deformity rather than to diminish it, if it were applied with much force. If direct lateral pressure were employed the force would fall upon the ribs and be transmitted to the vertebræ, and this would only intensify the existing curvature. If direct pressure could be brought to bear upon the bodies of the vertebræ it would accomplish what was wanted; but this was manifestly impossible, and he did not think that oblique force could be applied with advantage. While he did not believe in the use of mechanical pressure to any extent, he had adopted a certain system of therapeutics which seemed on the whole to be satisfactory, although it was somewhat difficult to give the details of this treatment.

In the first place he thought it advisable to place the patient in such a position that the deformity was reduced as far as practicable, and then have him remain in that position as much as possible each day. He recognized the importance of superincumbent weight in the direct causation of the deformity; so that it was fair to assume that if the individual could have always been in a recumbent posture the lateral curvature would not have occurred. Hence he thought it desirable that, as a part of the treatment, he should lie down as often as possible in his waking hours, and he was in the habit of instructing his patients to do this for two, three, or more hours in each day. Again, when the patient was lying down he believed it important that he should remain on his back, and not only on his back but in such a position that a lordosis was produced. This was accomplished by placing an air pillow blown up to its full extent under him in such a way that the shoulders and hips hung down on each side of the pillow. The reason for this was perhaps a little theoretical. In the rotation of the spinal column it was clear that the anterior portion of the vertebræ was most at fault. The same was true in Potts' disease, the disease being located in the anterior portion of the vertebræ, and

therefore in Potts' disease also we produced a lordosis if possible. We removed the pressure from the anterior part of the vertebrae to the posterior.

There was another position in which the patient was comparatively free from the deformity, and that was when the body was suspended through the action of the pectoral muscles, and for this purpose the horizontal bars, rings in Sayre's suspension apparatus were of value. In this connection Dr. Judson referred to the theory of Dr. Henry G. Davis, who claimed to have cured certain cases of pulmonary phthisis by increasing the capacity of the lungs in this way. It was well known that rotary lateral curvature produced deformity of the chest and reduced to a greater or less extent its capacity. Therefore, whatever would increase this capacity would tend to improve the curvature.

In regard to those inveterate cases which are regarded as incurable, he said he had never as yet had any such cases under treatment; but if he had a case which he thought was likely to go on to this condition, he would be more strenuous than usual in carrying out the various measures to which he had alluded. In such a case he would, furthermore, use an apparatus, but it would be one in which no lateral pressure whatever was exerted. It would be a brace which would keep the spine in a state of lordosis.

Dr. Reginald H. Sayre said that he agreed with Dr. Ketch in the opinion that preventive rather than curative treatment was what we must aim at in lateral curvature. He could also bear out the correctness of his observations as to the occurrence of the disease in early life. He had seen one case in which the curvature was said to have been present at birth, and another where it was noticed at the age of 6 months; while he had personally observed one case at 2 months. As for getting a perfect restoration to the normal form, he believed it to be possible only in those cases where there was very slight rotation. Those which presented considerable rotation and curving of the ribs, he thought, could never be restored completely to the normal shape. They might, however, be benefited, and he had been surprised to see the amount of improvement attainable in very advanced and, at first sight, apparently hopeless cases.

If possible, he said, he would treat a case by gymnastics and massage alone, with the object of educating the muscles of the patient and enabling him to retain such improvement of position as he could make by manipulations and exercises which, being different in various cases, it would take too much time to describe on the present occasion. If a case were sufficiently distorted to require mechanical support also, or if it was necessary on account of paralysis, he would use a plaster of Paris corset, as he had never seen a case which became worse under this mode of treatment. On the other hand, he had seen a number of most frightful distortions under instruments of various kinds, applied while the deformity was very slight, as attested not only by the statements of the parents, but also by photographs taken at the time of beginning treatment; and as this result had followed instrumental treatment in the hands of vari-

ous physicians of large experience, with patients whom he had found most obedient in following out instructions, he was forced to the conclusion that the fault lay in the method. His patients who had worn both braces and plaster of Paris jackets all gave testimony in favor of the superior comfort of the latter; a circumstance which, he said, would lead him to use this method even were the results no better than those obtained by instruments. When, however, he saw improvement in patients who had steadily grown more crooked during years of instrumental treatment, he felt more and more that most of the machines which he had seen were worse than useless.

Dr. Ridler said that he thought that surgeons were not sufficiently definite as to what they meant by cures, and what by exercises. He was in the habit of dividing the cases which he saw into three classes for prognosis and treatment. In the first class there was little or no rotation, and the spine could be put into what seemed to be the normal position for a brief space of time. In the second there was more or less rotation and rigidity of two or more segments of the spinal column, and the deformity could not be reduced; but pain and weakness were absent. In the third there was marked curvature and rigidity and, in addition, pain and weakness. In the first class of cases he believed that a cure could be effected, and here he deprecated all use of apparatus in the treatment. In the second he was inclined to think, with Mr. Bernard Roth, that the spine could be made straight and the rigidity overcome. Gymnastic exercises were of great service, but mechanical means seemed to him of somewhat doubtful value, although in certain instances he resorted to them. In the third class the spine could not be straightened, or the rigidity overcome; but the patient could be made to carry himself in better form. Here he was accustomed to furnish certain exercises, and in addition to use an apparatus which would act somewhat like the hand of the surgeon in correcting the deformity. Of course, much could be done by baths, massage and electricity; but more could be accomplished by the use of suitable gymnastic exercises than by any other means.

In the matter of exercises Dr. Ridler strongly advocated the system of Roth, in which the "keynote" position in which the patient is to be exercised is described as that position of the trunk and arms in which the greatest improvement in the position of the spine is obtained. A cure, he said, was considered by Mr. Roth to have been accomplished when the patient was so educated that the best possible position became an habitual one. If we knew just what we could accomplish in any particular case, a definite plan of treatment could be adopted, which was much preferable to the uncertain and slipshod methods which had been so long in vogue.

Dr. Gibney stated that he was now hard at work putting Roth's system to a practical test. Among the points which had not been taken up in the discussion was the subject of measurements, and he thought it was of the utmost importance that some definite system should be adopted upon which all orthopedic surgeons could agree. In carrying out

Roth's method it was very difficult, he went on to say, to get dispensary patients to come to the surgeon every day, and he had recently organized an evening school of gymnastics for young girls affected with spinal curvature. Their powers of resistance seemed, as far as he was able to judge, to have developed wonderfully already, and the experiment bade fair to be a very successful one.

In closing the discussion Dr. Ketch said, in reply to Dr. Judson, that he thought any analogy between inflammatory disease of the vertebrae and lateral curvature was inadmissible. It seemed to him, also, that Dr. Judson had been especially fortunate in not having met with any of those inveterate cases referred to in the paper and the discussion. He then remarked that there was no deformity so much like that of club-foot as rotary lateral curvature of the spine. The former condition, however, was usually detected soon after birth, and measures were taken to correct it. Hence we met with much fewer cases of inveterate club-foot than of lateral curvature, since the latter was not, as a rule, treated at a sufficiently early stage. After all, the prevention of deformity was the point on which he desired to lay most stress. He believed that no two cases were alike, and whatever the plan of treatment adopted, frequent inspection and the most careful watching were essential on the part of the surgeon.

P. B. P.

LETTER FROM BOSTON.

(FROM AN OCCASIONAL CORRESPONDENT.)

The Murdock Liquid Food Company.

There has been considerable interest in medical circles in this vicinity over a discussion in some of the secular and professional journals about a certain food preparation, manufactured in Boston. Believing that this interest is not confined to the Hub alone, perhaps a few words may be written of interest to those more or less remote from the centre of action. We refer, of course, to the Murdock Liquid Food Company, of which the principal, Mr. Murdock, is the active agent in maintaining for over a year a hospital in the building devoted to the manufacture of their food preparations, the latest of which is "Food Suppositories." This, the "Free Surgical Hospital for Women," is apparently the climax of Mr. Murdock's charity, liberality, and ambition, following his "West End Boys Home" and "Infant Hospital." This building is situated in the newer district bordering on the aristocratic Back Bay of Boston, is easily accessible by horse-cars and occupies a conspicuous corner. It is of brick, several stories high, and, as said above, is devoted to the preparation and putting up of the food, and to the hospital supported from the proceeds of the same. Of the merits of the food as such, we will make no remark, beyond stating that it has been commented upon in a late number of the *Boston Journal of Health*, and also state that in many of Mr. Murdock's wide-spread advertisements, he claims that under this food many patients recover without

the need of any operation. The main entrance is to the office, in the corner of the building, the entrance to that part of the hospital devoted to the regular profession being on the left of this, while that for the Homœopathic hospital is on the right. Over the entrance to the office is a large terracotta representation of the Bulls, colored prints of which are so often seen in apothecary stores. The office is beautifully fitted up, there being oil paintings on the walls, referring mostly to the reputed components of the liquid food, fruits, mutton and beef, and also many pictures representing the different processes of reproducing pictures. One or two paintings lay claim to some old master, and the paintings of the Bulls is here, all pleasing to the eye of the observer. Scattered about are groups of well-known statuary. Adjoining this office is the elegantly equipped office of the journal published by the company, *Annals of Gynecology*, edited by Dr. E. W. Cushing. This journal is probably well-known to most of the medical profession in the United States, enormous numbers having been circulated of the first three issues, in order that every member of the medical profession in the country might become acquainted with it.

Just here we will say, that many modern conveniences are found in this building, electric locks guarding the doors, electric clocks telling the time, and the building is lighted by electricity, has an elevator, and in fact is a well equipped building. In the basement is a large engine to furnish power for the system of indirect heating that Mr. Murdock has inaugurated: the air comes from the roof, by means of fans to chambers heated by steam pipes, whence it is delivered to the different rooms at a proper temperature, within a few seconds. The second floor of the building is devoted to the manufacture, (for account see February, 1888, number of *Boston Journal of Health*,) bottling and storage of the preparations, while the third floor is devoted to the Hospital and its appurtenances. The Hospital is in reality two, they being entirely distinct and separate, each having its own entrance from the street for patients and visitors, and each having its own staff made up of gentlemen of the Regular profession on the one side, and of the Homœopathic belief on the other. Each has its own operating room, small and large wards, etherizing room, waiting rooms and necessary sanitary arrangements of a hospital. One of the wards on the regular side is called the Fabiola Ward in memory of founder of some Roman Hospital. The convalescent patients of both sides eat at the same table, one kitchen doing the cooking for both. In the regular side are special wards for septicæmic and cancer cases, and also a well equipped laboratory for such bacteriological and pathological work as may be of interest to surgical gynecological work. The combined hospital will accommodate about 150 patients. Dr. E. W. Cushing has charge of the regular side, and Dr. Packard of the Homœopathic. It was in this hospital that Dr. Martin, of Berlin, operated while in Boston, performing his operation of removal of the uterus through the vagina. Each patient is required to take a certain quantity

of the food at each meal, before and after treatment, and, as was previously mentioned, some have recovered on this alone, and a list of the number of operations may be seen in almost every newspaper published in Boston.

A few words in regard to the discussion: As has been said, the Hospital has been under operation for over a year, and as Mr. Murdock states in his advertisements, one side is under the management of gentlemen belonging to the Massachusetts Medical Society, these gentlemen being connected with it from the start. The whole thing has been looked upon as not exactly the proper thing; still, nothing was done, and things simply took their own proper course, till the *Boston Journal of Health*, in a series of articles exposing fraudulent and deceptive foods and medicines, took up "Murdock's Liquid Food" among the number, exposing the falsity of the preparation, composition, and profit in a lengthy article. Mr. Murdock then saw fit to answer this, stating why he thought the article had been written, and denying some of the statements, making quite a breezy article: To this the *Journal* replies only in stronger terms, denouncing in emphatic language the preparation, and replying to some of Mr. Murdock's statements or rather mis-statements; things were getting interesting.

In the meantime Dr. Marcy, who had severed his connection some time previously to any thought of the discussion, published in the *Boston Medical and Surgical Journal*, a card stating his previous withdrawal from the Murdock Hospital, and giving as his reasons for so doing that the hospital was not acting up to its agreement, in regard to running and management of the hospital. Immediately, Mr. Murdock replies in the following number of the same journal, contradicting flatly some of Dr. Marcy's statements, and referring to letters of the Council of Ethics of Massachusetts Medical Society, in commendation of the enterprise, which in the next issue of the *Journal*, was flatly contradicted by the Council, thus leaving the way open for Dr. Cushing to show the letter which they claim he has not.

Here the matter rested, and interest is still maintained as to the outcome. Mr. Murdock has very much retracted and modified his advertisement in the daily papers, but probably with the means at his disposal, among which may be reckoned the *Annals of Gynecology* and the hospital, will endeavor to keep before the public the merits of his food preparations, while the *Journal of Health* intends pushing its exposure, and bring the whole thing plainly and truthfully in its proper light, along with others, the latest being Scotch Oats Essence.

I hope we have not wearied you with this account of our little tempest in our medical teapot, which has been written only with the idea that some of the wrath and fury of the storm may have bubbled over, and reached the outside world, thus concerning, perhaps, others than the ones directly interested.

W.

DR. OLIVER WENDELL HOLMES has presented his medical library to the Boston Medical Library Association.

INVERSION FOR SUSPENDED ANIMATION IN ANÆSTHESIA.

Dear Sir:—In THE JOURNAL of April 7th, is an editorial on the recent paper of Dr. J. J. Chisolm, entitled, "A very valuable lesson for those who use anæsthetics." It is customary, I think, for a writer or a reviewer in papers like those just mentioned to allude to the published observations of others who have experimented in the same field. I have not a copy of Dr. Chisolm's article and do not know what reference is made to other observers. The general reader would, however, infer from the editorial that what had been written previously had escaped the attention of the author and of the editor.

The subject of position is cases of apparent death from the use of chloroform is of great importance. After repeated experiments in cases of slight and alarming symptoms during the administration of chloroform, I became convinced that a sure remedy was at hand in every such case. If death has occurred, there is reason to believe that there was carelessness in watching for the first cessation of breathing and of the heart's action, and that there was an attempt to use other means *previous* to the complete inversion of the patient.

As an interne in the Massachusetts General Hospital I once aided a distinguished surgeon in holding suspended by one foot, a boy with a crushed thigh, who was, as it were, dead. He was held in this position till life reappeared. My own observations and experiments were made in 1867-8, and were published in the Transactions of the Illinois State Medical Society for the year 1868. Portions of this paper were copied in the work of Prof. H. M. Lyman on "Artificial Anæsthesia," etc. The story of Piory, Nélaton and the rats was entirely unknown to me at the time I made my report. The late Dr. J. Marion Sims, and a physician in New Orleans, whose name I have forgotten, published articles on this subject some years since. E. L. HOLMES, M.D.

Chicago, April 16, 1888.

[The limits of editorial space precluded the publication of the names of men that have used inversion in the cases under consideration, and their experiments. The writer of the editorial article in question knew that inversion has been used by other men than Dr. Chisolm, and he himself has used it successfully in two cases in which he was the administrator. Obviously, also, it is impossible for a writer to search such inaccessible literature as State Society Transactions for possibly existing papers. The editorial was not written to tell something actually *new*, but to call attention to a method that has given good results in the hands of a surgeon of vast experience.—ED.]

RUPTURE OF FUNIS.

Dear Sir:—On April 4th I was called to see Martha Brown (col'd), who had given birth to ten children. She had been in labor for about forty-eight hours. The head had been born about four hours before I saw her, and with the uterus most powerfully contracting failed to make any further

advance. I found the child dead, with the cord around the neck, the epidermis removed from the greater part of the face and neck. By gentle manipulations and traction I very soon succeeded in delivering the child and found the funis detached from the umbilicus and greatly diminished in size. The length was about normal. I found the placenta partially attached to the fundus with hour-glass contraction.

The fœtus, from the statement of the woman, must have been dead for more than a week as she received a fall from a fence and had felt no movement since. Antiseptic precautions were strictly enjoined, and she is now doing well, having had for a day or two a slight rise of temperature.

Rupture of the funis with the mother in the horizontal position, with normal length of cord (as in this case) has been reported in only two cases. One by Späth (fœtus macerated) and one by Dupuy. To these Budin (Paris) adds two cases.

B. A. DUNCAN, M.D.

West Point, Miss., April 10, 1888.

STATE MEDICINE.

STATE SANITARY CONVENTION

At Lewisburg, Union County, Pa. To be held under the auspices of the State Board of Health, Thursday and Friday, May 17 and 18, 1888.

PRELIMINARY ANNOUNCEMENT.

(Subject to amendment.)

FIRST DAY.

Opening Address, by His Excellency, the Governor of Pennsylvania.

Address of Welcome, by D. J. Hill, LL.D., President of Bucknell University.

"The Prevention of Contagious Ophthalmia," Dr. P. N. K. Schwenk, of Philadelphia.

"Diseased Meats and the Prevention of Trichinosis," Dr. G. W. Furey, of Sunbury, Pa.

"The Water Supply of Lewisburg," Prof. W. G. Owens, Bucknell University.

EVENING SESSION.

Annual Address, Hon. S. T. Dans, M.D., Lancaster, Pa.

"Cremation as a means of Disposal of the Dead," Dr. B. F. Hyatt, of Lewisburg, Pa.

SECOND DAY.—9 A.M.

"Small pox in Country Places," Dr. Fetterolf, of Mazeppa, Pa.

"Hygiene of the Teeth," Dr. H. Gerhart, of Lewisburg, Pa.

"Insanity Among Women," Alice Bennett, M.D., Resident Physician, State Hospital for the Insane, Norristown, Pa.

"Sanitary Protective Associations," Benj. Lee, M.D., Sec'y of the State Board of Health.

"Sanitary Shortcomings of Lewisburg," Dr. W. B.

Atkinson, Sec'y Penna. State Medical Society, and Medical Inspector to the State Board of Health.

AFTERNOON SESSION.

"School Hygiene," Dr. G. G. Groff, of Lewisburg, member of the State Board of Health.

"Household Hygiene," Prof. Frances Emily White, Women's Medical College, Philadelphia, Pa.

"How Germs Cause Disease," Dr. V. C. Vaughan, of Michigan University.

"The Drainage of Lewisburg," Mr. S. D. Bates, of Lewisburg, Pa.

EVENING SESSION.

Illustrated Lecture, Dr. Edwards, of the State Board of Health.

Papers are also expected from Dr. J. H. Kennedy, Shamokin, Pa.; Dr. A. Schultz, Superintendent of the State Hospital for the Insane, Danville, Pa.; and other distinguished scientific men.

It will be observed that while distinguished sanitarians from a distance will take part in the proceedings, the aim has been to make the latter, to a considerable extent, of practical use to the citizens of Lewisburg and its neighbors, and to enlist them in the study of its sanitary problems. For this reason they will be of great interest to all residents in small towns and rural districts, the conditions of which are necessarily very similar. The Convention will be presided over by the Hon. S. T. Davis, M.D., member of the State Legislature, of Lancaster, Pa.

A more definite programme will be issued later.

GEORGE G. GROFF, M.D.,

BENJAMIN LEE, M.D., Sec'y.

Committee.

NECROLOGY.

CALVIN ELLIS.

Calvin Ellis, M.D., was born in Boston, August 15, 1826, and died on December 14, 1885. He was a lineal descendant, in the seventh generation, of a farmer named Ellis who with some of his fellow-townsmen emigrated to New England in 1634 from old Dedham, County of Essex, England. Dr. Ellis was fitted for college at the Chauncey Hall school in Boston, and entered Harvard in 1842. His classmates remember him as a modest, genial companion, active in athletic sports, and ranking so as to secure a commencement part. Dr. Ellis used to say of himself that he played in college and "first awoke to the full meaning of life when he began the study of medicine." He entered the Harvard Medical School in 1846, and immediately won the attention of his teachers by his diligence and marked proficiency. Appointed in 1849 as resident pupil in the Massachusetts General Hospital he was noted as an assistant who carried out orders promptly and implicitly. After taking his medical degree, in 1850, he spent two years in the French and German hospitals, making a special study of clinical medicine, morbid anatomy and pathology. On returning to Boston he

was chosen as Assistant in Pathology to Prof. J. B. S. Jackson, and soon became Admitting Physician and Pathologist at the Massachusetts General Hospital. In 1863 he was made Assistant Professor of Theory and Practice of Medicine in the Harvard school, and in 1865 was appointed Adjunct Professor of Clinical Medicine. Two years later he attained to the Chair of Professor of Clinical Medicine on the resignation of Prof. H. J. Bowditch. Still later, Dr. Ellis was chosen Dean of the Harvard Medical School, in which capacity he exerted a powerful influence upon the history of that school.

Such, in brief, is the outline of Dr. Ellis' official career. In appearance he was a quiet, modest man, with a square jaw and firmly-closed mouth, but with a kindly, genial eye. His bearing was dignified and possessed that element of personal reserve which repelled undue intimacy but had no tinge of coldness about it. His influence upon students was in the highest degree beneficial, for they constantly felt the force of his sterling character. He was a zealous champion of the dignity and honor of his profession and never allowed its standard to be lowered without instant challenge. In his intercourse with students he was democratic and he was quick to recognize and encourage any gleams of ability which they might show. We remember the pleasure which lighted his face at one time when he was assured by a recent graduate that he had won not only the respect but the personal love of his pupils.

Dr. Ellis was not a prolific or constant writer, but he contributed a number of valuable articles to various journals, and during his long illness he began a work upon Symptomatology in which he strove to embody his ideas of the proper method for clinical study. The two chief accomplishments of his life are associated with his Deanship and Professorship. As Dean of the Harvard Medical School he labored with all the energy of his vigorous nature to organize and push forward the new departure by which the school was converted from an association of disjointed lectureships into a university system of graded courses. In this work he was opposed by the conservatism of some of the older men who failed to grasp the true significance of the movement, but Dr. Ellis' energy was unquenchable and he lived to declare that all his plans regarding the school had been carried out to a successful issue. The men who worked with him testify to-day to the encouragement which he gave them and to the unswerving faith which he had in their ultimate success.

He was a warm supporter of medical organizations and joined the American Medical Association in 1853; attended meetings in 1855 and 1865.

The other fruition of his life work stands to day as his monument in the Harvard method of clinical instruction. Despising cheap exhibition of expertism and "snap" diagnosis, Dr. Ellis insisted upon a rigorous method of differential analysis in every case which came before him and his classes. No matter how simple the case or how obvious the diagnosis, he compelled his students to give their reasons for their opinions, and to defend them against adverse criticism. Such a laborious process of eliminative

diagnosis sometimes seemed finical to superficial observers, but hundreds of young practitioners to-day gladly testify to the benefits which they enjoy as the result of the exacting precision of his methods.

Dr. Ellis was an enthusiast in the best sense of the term, and he ardently loved his profession, and throughout the suffering and feebleness of his long sickness, one needed only to mention the subject of clinical instruction to arouse in him all his old-time fervor. The closing hours of his life were in harmony with his whole career. He diagnosed his ailment as acute peritonitis from the perforation of a duodenal ulcer, and as he watched the steady approach of death, his mind was only intent upon softening for others the sorrow of separation. He was a noble example of true manhood and a lovable friend.

G. M. G.

HENRY LYMAN SABIN.

Henry Lyman Sabin, M. D., of Williamstown, Mass., a son of Jesse Sabin and Esther Bulkley, was born at Williamstown, Mass., May 29, 1801, died at his residence February 24, 1884. At an early age he was sent to Lenox Academy, and subsequently entered Williams College, where he was graduated at the age of 19. He taught school after he left college, and studied medicine at Chatham, N. Y. He attended Lectures at the Pittsfield Medical School and at New York. After completing his medical education he returned to Williamstown, where he commenced practice, and continued for over fifty years. During this period he endeared himself to the people of his native town, and no man ever lived in the community who was more beloved. No man knew more intimately and sympathetically the lives of the people among whom he practiced than Dr. Sabin. He shared in their joys, sorrows, hopes, and associations. Outside of his profession Dr. Sabin assumed his full share of public duties. His religion was the old-fashion, genuine New England article, and for just half a century he was deacon of the Congregational church. When abolitionism was a reproach, Dr. Sabin took it up with unselfishness, made his house a centre for its advocates, and he preached temperance when New England rum was a popular beverage. He never narrowed his interests within his immediate limits, but kept abreast of the great popular movements outside. He early became a Republican, was sent to the lower branch of the Legislature, served with credit in the Senate of 1857, and was prominent in county affairs. In 1850 he was President of the Massachusetts Medical Society; he was for many years a trustee and also medical examiner of the Northampton Lunatic Hospital. For more than thirty-five years he was one of the board of trustees of Williams College, having assumed the office in 1838, about the time Mark Hopkins became president. Dr. Sabin enjoyed the official association and was cordially esteemed by his associates of the board, among whom was for many years his classmate, the Hon. E. C. Benedict, of New York, Judge of the United States District Court. He joined the American Medical Association in

1864. Probably no citizen of his county possessed a finer vein of natural eloquence than appeared in Dr. Sabin on many public occasions. He was admirable as an occasional extempore speaker, shining in after-dinner efforts, when the inspiration of warm feeling was guided by nice native tact. A brilliant and touching example of this power that never left the doctor was shown at the grave of his wife. The event was peculiarly sad, for she was buried on their golden wedding day, and preparations had been made for celebrating that anniversary. When the body was lowered to its rest, Dr. Sabin thanked his neighbors of half a century for their kindness in words of simple pathos. It was a touch of nature that illuminated the formalities of Puritan burial with a light as clear and tender as a gleam of sunshine. The home thus broken had been the centre of a refined and gracious hospitality, and in it the members of the County Medical Society had been bidden to celebrate the golden wedding of the local father of their profession.

Dr. Sabin was bound up in his household, and carefully cherished all family associations. Few men, indeed, have ever been more widely loved or better deserved the general respect. Dr. Sabin was twice married; his first wife, Lucy Whitman, survived only about a year. He subsequently married Abby, daughter of Nathan Benjamin, of Catskill, N. Y. As the issue of this marriage there are now five children, viz.: Nathan Henry and Charles, and three daughters. Dr. Sabin survived his second wife only about ten months.

N. H. S.

BOOK REVIEWS.

THE YEAR-BOOK OF TREATMENT FOR 1887. A Critical Review for Practitioners of Medicine and Surgery. 8vo, pp. 336. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

This is a very good compendium of the changes that have occurred in the use of medicine during the year. The series of which this is a volume is well known, and extended comment is hardly necessary. It will be found exceedingly useful by those who wish in collected form an abstract of the therapeutic literature of the year. Each department is ably edited by the following collaborators: Diseases of the Heart and Circulation by J. M. Bruce; of the Lungs and Organs of Respiration by R. Douglas Powell; of the Nervous System by James Ross; of the Stomach, Intestines, etc., Sir Dyce Duckworth and Robert Maguire; of the Kidneys, Diabetes, etc., by Chas. H. Ralfe; Rheumatism and Gout by Robert Maguire; Anæmic and Allied Conditions by Sidney Coupland; Medical Diseases of Children by J. F. Goodhart; Continued Fevers by Sidney Phillips; General Surgery by F. Treves; Orthopaedic Surgery by W. J. Walsham; Surgical Diseases of Children by Edmund Oorus; Genito-urinary System by Reginald Harrison; Venereal Diseases by Alfred Cooper; Diseases of Women, D. B. Hert; Midwifery, G. E. Hermike; Skin, Malcolm Morris; Eye, Henry Pow-

er; Ear, G. P. Field; Throat and Nose, P. McBride; and Summary of Therapeutics of the Year by W. G. Smith.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By JOHN V. SHOEMAKER, A.M., M.D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia. With colored plates and other illustrations. 8vo., pp. viii, 633. New York: D. Appleton & Co. 1888. Chicago: A. C. McClurg & Co.

This book has an advantage for the general reader over most works on diseases of the skin, in that the new dermatological technical words and phrases are dispensed with as much as possible. The consideration of the different diseases of the skin is preceded by some general considerations on anatomy, physiology, symptomatology, diagnosis, pathology, etiology, treatment, and prognosis. The treatment recommended for different diseases is such as almost any practitioner may carry out. Half a hundred pages of formulary, and a good index, complete the book.

MISCELLANEOUS.

COCAINE ADULTERATIONS AND IMPURITIES.—At the meeting of the Pharmaceutical Society of London, on March 14, Dr. B. H. Paul discussed this subject in a paper.

Samples of the hydrochlorate of cocaine may be classed as crystalline and amorphous, and it is well to note that the author of the paper doubted whether the salt in a pure state ever assumed the amorphous condition. In fact, salts which are crystallizable with difficulty are in all cases mixtures, in various proportions, of cocaine salts with other salts of a different nature. The test of purity, based on the more ready solubility of the non-crystallizable portion of the salt in chloroform, is not altogether reliable, and the weight of the crystals obtainable on the neutralization of an aqueous solution by ammonia is stated to be preferable. Some investigators professed to have identified an impurity, which they called "hygrin," the presence of which accounted for the difficulty with which certain specimens are crystallized. This substance, however, Dr. Paul considers to be apocryphal, although it is evident that a product known as "amorphous cocaine" is not infrequently present, and admits of identification. Its hydrochloride is the usual impurity. It is of a pale yellow color, a bitter taste, and of feeble anæsthetic properties. It has an alkaline reaction, and is sparingly soluble in water, though freely so in alcohol and ether, differing in this respect from the pure salt. A dilute solution becomes milky on the addition of ammonia, and remains so. The aqueous solution of this neutral hydrochloride becomes acid on boiling, and this accounts for the tendency of solutions of cocaine to become acid. Cocaine itself readily undergoes decomposition with benzol ecgonine, on being treated with alcohol or water, and this constitutes another source of impurity in the course of preparation. To obtain a pure product, the alkaloid itself should be dealt with and not the hydrochloride, which is wasteful because of its extreme solubility. It would appear from these results that the quality of cocaine hydrochloride varies very much. In fact, as Dr. Paul observed, the salt is sold at a price far too low to ensure its purity. The makers who produce a good salt are heavily handicapped in the competition with others who supply an inferior article at a low price. —*British Medical Journal*, March 31, 1888.

"SCOTCH OATS ESSENCE."—In the April number of the *Druggist's Circular and Chemical Gazette*, for advance sheets of which we are indebted to the manager of that excellent journal, Dr. R. G. Eccles, of Brooklyn gives an account of his

analysis of a nostrum known as "Scotch Oats Essence." He declares that the preparation is about one-third alcohol, and that each ounce of it contains nearly $\frac{1}{2}$ gr. of morphine, notwithstanding the fact that it is "pledged to destroy the morphine craving and 'free the victim from his terrible bondage.'" Commenting on the matter, our contemporary says editorially:

"For many years oats have enjoyed an excellent reputation as an article of food. There has been a run, so to speak, on the oat idea, and the bowl of porridge is systematically eaten, not so much, perhaps, from strictly hygienic reasoning as to its diet value as from a notion that it is a sort of special tonic or reconstructive. From this pleasant idea of a food that serves as a medicine in ordinary cases, the transition is easy to a belief in the efficacy of a medicine derived from food when the case becomes extraordinary. If the oat-grains are good in ordinary cases to prevent disease, why should not their 'essence' be potent as a restorer when disease has already made a beginning? It is not difficult to develop so taking an idea, and an essence or extract of oats has been more or less talked of as a therapeutic novelty by a certain school of practitioners. With the value of such a preparation, or the want of it, we have nothing to do at present. Our concern is with another utilization of the oat idea. For some time past public attention has been called by persistent advertising to a nostrum named 'Scotch Oats Essence.' Its extravagant claims have at last secured for it scientific attention, with a result that is most alarming. From the report of an analysis of this essence by Dr. Eccles, which appears in another part of the *Circular*, it will be seen that the inventor is possessed of more than common ingenuity, but ingenuity, unfortunately, of a most diabolical character. Under the guise of a preparation which, from its name, might be expected to be nothing worse than a harmless humbug, he is furnishing an insidious poison. With a refinement of cruelty he lays a trap for the unwary, and under the bait of oats places the bane of opium. The dissemination of such a vile concoction is a manifest menace to the public health, and naturally the question at once arises: Have we no law which will prevent such attacks on the people? Whether our present sanitary regulations are sufficient for the purpose is for the authorities to determine. If they are not, the sooner we have stricter ones the better. Meanwhile, the only immediate protection the public can have is from the pharmacist. He ought to be able to easily confirm the analysis of Dr. Eccles; which, we might add, has already been verified by another prominent chemist, and, knowing the character of the 'Scotch Oats Essence,' it will be his duty to inform any intending purchaser of its real and dangerous nature."—*N. Y. Med. Journal*, April 7, 1888.

THE DUTY ON MEDICAL SUPPLIES.—At the regular meeting of the Chicago Medical Society, February 6, 1888, the following resolutions were adopted, in response to the previous action of the Georgia State Medical Society, on the same subject:

WHEREAS, A feeling of humanity suggests that all medical and surgical supplies, instruments, and appliances, and all foreign bound volumes upon medical and surgical subjects, including those used in the diagnosis, as well as treatment of diseases, should be furnished to those needing them at the lowest possible price.

Resolved, That the Chicago Medical Society urge upon Congress, that in the cause of humanity the import duty should be removed from all medicines, medical and surgical appliances, and from every thing used in the treatment or diagnosis of disease.

Resolved, That the Secretary of this Society transmit a copy of the foregoing preamble and resolutions to the Congressional Committee on ways and means, and to our Senators and Representatives.

THE FIFTH ANNUAL MEETING OF THE CONFERENCE OF STATE BOARDS OF HEALTH. will be held at the Grand Hotel, Cincinnati, on Friday, May 4, preceding the Annual Meeting of the American Medical Association. The Meeting will be called to order at 7:30 P. M. Several very important questions are proposed for discussion.

THE GABRIELLE BELLION PRIZE of the Academy of Sciences of Paris will be awarded annually to the one writing the best work on or making the most useful discovery in human sanitation, or for the advancement of man.

DEATH OF DR. C. R. AGNEW.—After the publication of the editorial part of this issue containing a notice of the dangerous illness of Dr. Agnew, the telegraph brought the sad news of his death last Wednesday afternoon. A notice of his life and work will appear next week.

DR. LEOPOLD VON HOLST, for many years one of the editors of the *St. Petersburger medicinische Wochenschrift*, died recently of pyæmia.

DR. WM. T. LUSK, of New York, has been elected Corresponding Member of the Académie de Médecine de Paris, Surgical Section.

QUE PROSPERIT OMNIBUS.—A Wisconsin paper says that a farmer in Georgia made \$100 off an acre planted in watermelons, and that a physician in the neighborhood made \$200 off the same acre.

PEPPER'S SYSTEM OF MEDICINE is shortly to appear in Italian.

AN ELEGANT PREPARATION.—It is said that William R. Warner & Co., recently had on exhibition in their window, 1228 Market St., Philadelphia, a pure white crystalline mass of caffeine, weighing 200 pounds, the product of ten tons of coffee. The firm uses it in the preparation of their granular bromo-soda.

THE CHICAGO MEDICAL SOCIETY at its annual meeting on the 2d inst., elected James H. Etheridge, President, and re-elected Frank Billings, Secretary.

THE MEXICAN GOVERNMENT has applied to the Health Department of Chicago for full information regarding the actual working of the Department.

CARPET-BEATING IN THE OPEN AIR has been forbidden by the Conseil de Salubrité, of Paris; they must be beaten in closed rooms, and the dust subsequently disinfected.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM APRIL 7, 1888, TO APRIL 13, 1888.

Capt. Geo. E. Bushnell, Asst. Surgeon, from Ft. Preble, Me., to Camp Pilot Butte, Wyo.
First Lieut. Wm. Stephenson, Asst. Surgeon, from Camp Pilot Butte, Wyo., to Ft. Verde, Ariz.
First Lieut. E. A. Mearns, Asst. Surgeon, from Ft. Verde, Ariz., to Ft. Snelling, Minn.
First Lieut. Wm. S. Knudler, Asst. Surgeon, from Ft. Snelling, Minn., to West Point, N. Y.
First Lieut. W. C. Borden, Asst. Surgeon, from Ft. Douglas, M. T., to San Antonio, Tex.
First Lieut. G. L. Edie, Asst. Surgeon, from San Antonio, Tex., to Ft. Douglas, M. T. S. O. 79, A. G. O., April 6, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING APRIL 14, 1888.

P. A. Surgeon Henry F. Percy, from Naval Academy and to Hospital, Washington, D. C.
P. A. Surgeon M. H. Crawford, from Hospital, Washington, D. C., and wait orders.
Surgeon J. M. Flint, from Fish Commission duty and special duty at Smithsonian Institution.
Surgeon R. C. Persons, to duty in charge of Army and Navy Hospital, Hot Springs, Ark.
Asst. Surgeon E. F. Stone, from further treatment and to duty at Hospital, New York.
Medical Director David Kindleberger, from Hospital, Washington, D. C., and wait orders.
Medical Inspector A. A. Hoehling, to Naval Hospital, Washington, D. C.
P. A. Surgeon G. E. H. Harmon, to duty at Naval Academy, Annapolis, Md.

CORRIGENDUM.

The name and address of the Secretary of the Section on Medical Jurisprudence are Charles B. Belt, Boston, Mass. His address has been incorrectly printed as Suffolk, Iowa.

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ORIGINAL ARTICLES.

DRESS OF WOMEN IN ITS RELATION TO THE ETIOLOGY AND TREATMENT OF PELVIC DISEASE.

Read before the Gynecological Society of Boston, December 15, 1887.

BY HELEN L. BETTS, M.D.,

OF BOSTON, MASS.

There are certain conditions of degeneracy that come to prevail in countries and among people, which strike at the root of vitality and therefore of beauty and usefulness. The changes by which such conditions are effected are not sudden nor forced. They creep on gradually, in apparently legitimate ways, and many generations may slip away before some sage thinkers, more observant than the rest, or whose individual interests are more closely touched, open wide eyes to find a relentless hand is upon the throat of the dearest interests of home and country. And these results do not come of malicious intent. Ignorance of relation of cause and effect, and *lack of thought*, are often as powerful for evil as deep-plotted mischief. This is evident in the damaging results now seen in sections of country which depended upon the once heavily timbered uplands beyond for their moisture and streams. The pioneer learned too late that the pine and cedars were the gentle persuaders of the rain, and so the mainspring of agricultural prosperity, and now millions of money and years of planting cannot bring back this tremendous rain-factor, or the stalwart beauty that was ignorantly sacrificed.

This is not an inapt illustration of the vital harm that woman is doing to-day to herself and posterity by her unhealthful dress. It strikes a paralyzing blow at the root of vitality, beauty and usefulness.

We need not look back beyond the observation and work of to-day, to know there is a radical wrong somewhere in woman's environment, which tends to degeneracy. Perhaps the index to woman's physical status can be best obtained by noting the proportion of medical literature devoted to woman's diseases. There are Systems of Gynecology, American and Foreign, which in themselves make whole libraries. Gynecologists and gynecological societies are multiplying in every section of the land. Where so much remedy is needed, there must be great disorder. Is this a necessary condition? Was woman born to invalidism? With the lower mammalia this is not so. The female is quite as hardy and endur-

ing as the male, and careful study shows there is nothing lacking in woman's anatomical structure which prevents her from being vigorous or even powerful.

But the fact remains that women, as a rule, are delicate, with little power of endurance. They bear with difficulty one, two, or three children, then are faded and nervous, and finally drop into the long list of patients that have uterine disease or nervous prostration, or, if they have neither of these, they *think* they have, which indicates quite as unsound a condition of body and mind. Why should they not grow hale and hearty with the years, and with their husbands and brothers? It is not fair to say that any one factor effects all this wrong. Much can be said of early crowding at school, irregular meals of indigestible food, late hours, imprudence at the menstrual period, untrue husbands, and fast living generally; but if woman brought to life's battle a properly developed physique, all these conditions *combined* could hardly effect such complete wrecks as often drag themselves into the office of the specialist. Indeed, from a robust body, most of these blighting influences would rebound, leaving it still symmetrical and unmarred. No vigorous girl would be overtaxed by our ordinary school duties. Wholesome tiredness would send her early to bed; a healthy appetite would find no satisfaction in caramels, limes, croquettes, and nondescript entrées at all hours. A woman with a sound mind in a sound body would be too sufficient to herself to make an alliance with one who lacked truth and honor. A healthy, positive nature would find nothing satisfying in hot-house society life, where social evil generates and thrives.

Still, acknowledging these other unwise conditions, let us take this one factor—dress—and see what its physiological, or, rather, pathological bearings are. In early life girls are as vigorous and healthy as boys, but, as a rule, they are taught in-door sports. When they should be romping and climbing in the open air, developing tone and muscle with which to meet the needs of mature life, they are keeping tiny clean, nursing dolls, and being taught to be lady-like!

But, provided girls are allowed and taught climbing, running, ball and tennis, they can obtain but a small part of the good they might gain, because their *movements are restricted*. If a girl climbs she catches her skirt, and is pulled back; she tears her dress, and is scolded for being a romp. Before a boy is six years old he is relieved of skirts, and the boy's real joy in his first pantaloons is not simply pride in

being dressed like a man, it is a natural, happy outburst at being *free*. Now he can run, leap, turn somersaults, stand on his head. There is nothing to catch, chafe or hinder. His close garments are a part of himself. No wonder the boy in his first pantaloons is exultant.

Up to ten or twelve years a girl can walk with comparative ease, if she cannot climb; but now, the lengthening of her skirts increases her bondage. Just as every line and muscle is rounding with nascent strength and beauty, when growth is giving generously to the most active members and development is fast widening or limiting the relative power and skill of each system in the organism, what is every girl taught to do? She decorously confines the limbs by heavy clinging drapery which impedes every movement; each step is checked by the muffled friction of soft, pliant skirts that sway and wrap about the calves and ankles and hold her back from rapid walking, and make running exceedingly difficult. The result is that all exercise involving rapid and extended movement of the thighs is gradually abandoned. Now this girl is the prospective mother of the next generation. The pelvic bones, ligaments, muscles and fascia are in process of development, and this is a momentous period. It matters not—*custom and fashion* say "*Long skirts*," so the limbs are pinioned. Now what becomes of the obturators, the transverses, the levators, and sphincters? Their proper development *cannot* come, save from vigorous action, daily systematic, energetic exercise, which brings into play the back, thighs and abdominal muscles. No one who has dissected a pelvis, or studied those magnificent plates of Savage, can doubt that woman is *fully* equipped for rapid, easy and safe parturition.

Then why does woman dread childbirth, as cities dread the earthquake? Because she knows that in the last dread throes the foundations are often literally torn away. And why? Simply because all those pelvic belongings are allowed in early life to lie dormant and undeveloped. The forces that nature has appointed as a reserve corps, at both flanks and rear, to lengthen and strengthen the perineum in the last minutes of extreme pressure and tension, are unused and unskilled, so they do what untrained members usually do when brought to the crucial test: They fail, and the perineum is sacrificed. Where lies the blame? So long as woman wears long, clinging skirts she cannot, as a rule, reach that point in physical development that makes child-bearing safe and desirable. A mother lately complained to me that her little girl was learning slang from playing with boys. She ran in crying, "Mama, Bab stumped me to shin up the piazza post, and I did it, too." My advice was, "Forgive the slang provided she shins up the post successfully." It is this lack of bodily freedom which makes woman fragile; she may have no disease, she may call herself well, but we have Health and Health, or *Wholth*, as the old Saxon has it. Health may simply allow its possessor to follow comfortably a quiet, uninterrupted routine life. By living carefully and guarding against extravagant outlay, the body may answer all moderate require-

ments without sickness or pain. Life is a calm, unimpassioned, monotonous existence. Health may make life a glad song of joy; every faculty is tense and keen; simple existence is a luxury. Eating, drinking, sleeping are physical delights, and breathing is literally a constant inspiration. This is as was intended and what is possible; but it can only come with exuberant, robust health. Whatever checks growth and development cuts off the possibility of a vigorous physique, and also the main avenue by which the most healthful, joyous influences reach us.

I have seen women in mature life whose fragile, half-developed bodies have set relentless limits to enjoyment, mental and physical. They looked out as from grated prison cells upon the spontaneous, active life, which was once, but now no longer, possible to them.

The moving finger writes, and having writ
Moves on; nor all their penitence or wit
Can lure it back to cancel one half line,
Or all their tears wipe out one word of it.

There is another feature quite as objectionable; while the long drapery dwarfs the body and lowers its vitality, the corset with unsupported skirts induces actual disease. The prevailing style allows all the weight of clothing below the waist to rest upon the abdomen and hips; as the point of greatest projection of the viscera is higher up than the hips and more prominent, this part forms the main support; consequently, there must be compression, with displacement of the abdominal viscera and a corresponding degree of disturbance of blood-supply and nutrition. This often gives rise to a condition of the uterus that for a long time was covered by the term inflammation, but that has been elaborated by different authors, according to their ideas of pathology, and now we have the engorgement of Lispane; the irritability of Hodge and Gooch; the active congestion of Chapman; the passive congestion of Enmet; Kolb's formative irritation; Hewitt's abnormal nutritive activity; the areolar hyperplasia of Thomas, etc.; all agree that there is abnormal cell-proliferation.

We will, for clearness, adopt a term in every day use, congestion. What follows a long-continued congestion? *First*, disturbed nutrition of tissue. *Second*, altered function; and with these two conditions, without the aid of another single cause, we have the factors of nine-tenths of the disturbance that gynecologists are called upon to treat. Let us see if this statement is too broad. Congestions, displacements, flexions, glandular enlargement, erosions, excessive and altered secretions, naturally arise from prolonged compression with displacement.

What of lacerations of the cervix? Is it not most probable that the muscular fibres of the cervix may, during a long-continued congestion, lose their resiliency and elasticity, become fragile, and so, easily torn during the prolonged and violent dilatation of parturition? Would not dropsy and apoplexy of the ovarian follicles be a natural result of prolonged and excessive hyperemia of the ovaries and tubes, which, together with the uterus, share in the general compression and stasis of blood? Do not the his-

tological researches of to-day point strongly toward the congestion theory as being the most rational on which to explain fibroid growths? Among pathologists we may speak of our country-woman, Dr. Mary Putnam Jacobi, as worthy authority, and her investigations all go to show that in subinvolution venous congestion is the etiological factor where without the *arterial hyperemia* necessary to *inflammation*, we have the *venous hyperemia* necessary to *growth*. Upon this ground it has been suggested that the frequency of fibroids in the posterior wall of the uterus may be explained, the constant pressure from the crowded rectum causing venous hyperemia, the potent factor in fibro-genesis.

However, it is not necessary to trace all uterine disease to congestion in order to make attention to dress imperative. Observation with ordinary reasoning, without a knowledge of pathology, teaches that great injury must be caused by continued weight and pressure. With this fact granted, it is hard to understand why it is so generally ignored. In other disturbances of the organism the environment is always taken into account in the treatment. We not only use remedies which relieve, but we remove influences which have brought about or which increase the disorder. What results from treatment could we expect in typhoid fever even with the most approved remedies, with the patient breathing sewer gas day and night? Or in a case of nervous prostration in a teacher who spends her days in an ill-ventilated school room and her evenings in correcting examination papers? Could we expect brilliant results in gastritis with a patient who breakfasted on fried pork and buckwheats, and dined on corned beef and cabbage? Would he be a scientific surgeon who would apply a soothing disinfectant to a compound fracture of the humerus, and then leave the arm ungarded to dangle loosely in the coat sleeve? But is not this as consistent with the first principles of medicine and surgery as it is to expect successful results from pessaries and depleting applications to the uterus while the patient is steadily pushing the abdominal contents upon and into the pelvis with from four to twelve, and often twenty, pounds of pressure? If it is reasonable and scientific to regard diet in indigestion, mental and social influences in neurasthenia, atmospheric changes in pulmonary disease, is it not quite as rational to regard the force of gravity in uterine disease? And yet it is often left entirely out of account in the matter of treatment.

I will speak simply from personal knowledge. A lady came into my hands for retroversion with enlargement, and of course, prolapsus. This condition had first been recognized six years ago. She had been under the care of a specialist from time to time ever since. She had had everything commendable in the way of applications, douches, and pessaries, but she wore the usual weight about the hips, and she had never been at all enlightened concerning its hurtful effect. Her physician had exhausted all resources in the line of internal supports in trying to raise up the large and heavy uterus, while all the time a firm pressure of several pounds was irresisti-

bly weighing it into the pelvis. For this patient, like very many women, had lost the dorsal curve, and so the body was carried at such an angle that the whole weight of the abdomen was precipitated directly upon the pelvis.

Some months ago a gentleman came to the office, and when I saw his sad, worn face and heard his pathetic voice, my mental diagnosis was, this man has either dyspepsia or an invalid wife. It proved the latter. She had been ill two years, nine months in bed, but had finally convalesced to that degree that she could sit up for two hours during the day. She was assured that all she needed was strength, but, as for several weeks she had been losing ground, she, with her husband, were facing, as bravely as they might, the grim fact of invalidism for an energetic wife and mother of thirty years of age. Her illness really began with subinvolution six years before. For four years this continued, with constipation and the usual half invalid condition. After severe exertion during sickness in her family, she was obliged to take her bed with an acute uterine congestion; soon mucous polypoid growths appeared and a surgeon from the city was called and an operation was performed. Later, the retroverted uterus was replaced with a sound, which operation was followed by prolonged hemorrhage. After nine months in bed, a naturally strong physique came to her rescue and she regained her feet. But she was in constant pain in her back, head and limbs. She was wakeful, and her mind easily confused and depressed. The uterus was engorged, and all the pelvic organs were crowded as low as the floor of the pelvis would permit, and in a state of intense hyperemia.

The first, clearest indication seemed to remove the superincumbent pressure; so, as usual, I examined her mode of dress. You will be interested from a professional standpoint to know what this patient wore. I examined her at her home, so she had on simply her in-door garments. There were, knit and muslin drawers, flannel and muslin underskirts, hoop-skirt and bustle, then a muslin and a dress skirt, seven bands; fourteen thicknesses were buttoned closely about the corset, and not long before, her physician having noticed that she wore her garters about her legs, said he feared they would interfere with circulation, and advised that she should put an elastic band about the waist and fasten the stockings to this! I asked if her clothes were not oppressive. She said she thought she wore very light clothing, but had noticed at night a purple crease about the waist where the bands came about the corset, and wondered if that could keep her from gaining strength. With all this weight and compression this poor woman was waiting to get well, wondering why she could not stand, that her limbs ached and prickled, and why she could not walk without getting so tired. Neither physician nor specialist had spoken of her mode of dress.

Her recovery—for now at the end of five months the patient is virtually well; her bowels move without aid, she walks, rides, goes to church, eats and sleeps like other people, directs her house, is happy and bright, and the husband is as cheery as the wife—

her recovery was brought about in the simplest manner. She took off her corset, adopted under garments without bands. She took gymnastic exercise regularly—two or three times a day she assumed the genu-pectoral position. The medical and local treatment I consider really unimportant compared with the changes of habit. This consisted in the ordinary means for restoring tonicity to the intestinal tract, with the usual uterine applications.

These cases will serve as an index to an interesting experience which has convinced me that there is a reason not generally recognized, why our brothers in the profession and in the flesh pass over so lightly the subject of woman's dress in their practice and teaching. Men who have won enviable places in the profession, both as authors and workers, dismiss the subject with a few lines. In the "Cyclopaedia of Gynecology," published lately by Wood, consisting of eight volumes, it would be hard to find one half page that could possibly be construed to refer to woman's dress. In Prof. Mundé's very excellent and practical handbook upon "Minor Gynecology," in two hundred and fifty pages upon treatment of displacements, *two single lines* enjoin removing the superincumbent weight from—not the uterus, but—the pessary, that it may not be displaced. He describes and gives illustrations showing over seventy different pessaries and abdominal supports which are made from leather, cotton, kid, hard rubber, celluloid, glass, whalebone and cedar wood. In speaking of abdominal supports, he advises that they be suspended from the shoulders, and gives an illustration of an apparatus made of a metallic rim which shall rest on the hips and be suspended from the shoulders; to this with the skirts, he remarks parenthetically, the abdominal support is to be attached! The picture is almost pathetic, and with a knowledge of Prof. Mundé's love of mechanics and skill in contriving, it is simply astonishing. The situation will admit of but one explanation.

Patients often ask. "What do you think is the reason my physician did not tell me about my clothes?" There is but one answer. Because he did not know. "But why should he not know? Physicians know how women dress." Oh, yes, but he never *in his own body* felt the bondage. Nothing teaches like experience. No surgeon is so thoroughly aseptic as one who has seen the germs grow in the culture tube and demonstrated them under the microscope. He had seen with his own eyes, and knows he has an actual factor to deal with; there is nothing that would so effectually convince physicians of the immense factor for harm that woman's dress is to women, and so to the race, as a little individual experience. You need not put on a fashionable calling suit with braid and jet which would weigh all the way from ten to forty pounds, the waist of which must be put on after the bonnet and gloves, for after it is fastened the arms are literally pinioned. This would be extreme and unfair. Take an ordinary working suit, not omitting the high-heeled, narrow-toed boot. You would then have from four to ten pounds slipped snugly down over your corset, with yards of drapery outside and beneath swaying and twisting about

your limbs. Go about your ordinary work, which involves no more active movement than woman's work. Feel the clinging friction at every step. Have a hand always ready to hold your skirts from your own and others' feet as you go up and down stairs; get in and out of your carriage. Walk across Boston Common in a stiff breeze—this for one day only. Three items I would confidently vouch for in the outcome: *first*, most righteons, but undignified and unrestrained rage; *second*, rending of raiment; *third*, you would never attempt to treat a patient for displacement, or congestion, or vesical irritation without first working a reform in her dress.

It may be said that women are used to their dress and so do not mind it. "'Tis true, 'tis pity—pity 'tis, tis true." The majority of women know no more of bodily freedom than the domesticated canary or parrot. But the fact does not make them any more efficient or happy members of society, or fit their half-developed bodies to produce a hardy progeny. Perhaps some lack of effort in this direction may be due to the fact that it is exceedingly difficult to persuade women to make radical changes in their dress. They will tell you their clothes are not tight, they never lace, they can turn round in the corset. Indeed their clothes are quite comfortable. They would rather take medicine for the congestion or the constipation, or most usually both, and in the pressure of daily work, when I see that only a round half-hour's talk with blackboard illustrations and full directions for the entire change of dress will effect a conversion, I have given the patient the desired bottle of medicine, pocketed the fee, shut the office door with a groan over the hopeless condition of the patient, and let me add in self-defense, a groan over my own shiftless treatment.

Were this matter not one of vital moment, in view of the unwillingness of women to make the necessary change we might, with some peace of conscience, leave these miserable women and girls to their unhealthy dress, treat them as so many emergency cases, whose lives are to be comforted and eked out in a superficial from-hand-to-mouth way. But this is *not* a side issue. No fact in Biology stands better proved than this, that change of function is followed by change of structure. With diminished exercise comes diminished size and development, and the dwindling of a little-used part has by inheritance been more and more marked in successive generations. This opinion, in his later life, Mr. Darwin was careful to keep constantly in view. Although the especial factor of natural selection which he first recognized still held its ground as playing an immense part in organic evolution, he repeatedly stated that great weight must be attributed to the inherited effects of use and disuse with respect to both mind and body. If these are facts, and they stand proved every day to those who observe and think, what sort of a race will the half-developed, half-furnished pelves of to-day bring forth? Is it inevitable that the children of culture and intellect be always puny and sterile? If history *must* repeat itself can we not by earnest, wise effort raise the next cycle to a higher plane than this?

The matter of women's dress is one in which pub-

lie opinion has a powerful influence, especially the opinion of men. Women dress not for their own comfort, or the health of posterity, but to please their brothers, their lovers, and their husbands. Men could wield a mighty influence for good in this work if they but realized its importance. As man has a more extended field for observation, woman has come naturally to regard his opinions with deference.

Women physicians, especially, work here at a disadvantage. With most women, save those in the advance ranks of thought, any suggestion in the way of hygiene in dress is immediately branded as Dress Reform, and straightway the masculine, pantaloon-type of radical dress is brandished and they say, "What else could we expect from one who would study medicine?"

Woman does not like to be laughed at and called strong-minded. She would rather suffer pain and discomfort in her body than to be wounded in her heart by those whom she loves. This seems a plight—certainly we are warranted in using the word, for never was mortal more plicated, enfeebled, almost inextricably entangled—this seems a plight in which you, my brothers, have a work to accomplish, which no one else can do. Will you do it?

that night with an equal quantity of bicarbonate of soda. This had the desired effect, so that next morning the doctor discontinued his attendance supposing that the difficulty had been overcome.

For several days subsequently there was no appreciable change in the patient; he had no inclination to leave his bed, the amount of fecal matter that continued to pass being something extraordinary. Contrary to directions he had been given such food as he craved, which was generally of a gross kind, and I also learned for the first time that before his illness he was in the habit of buying a pound of sugar at a time and eating it in the store, or he would go to the butcher's and purchase a like quantity of bologna sausage or hoghead cheese, although he had plenty to eat at home, in fact it was evident that we had to deal with an aggravated case of bulimia and its sequelæ. As I have just stated, through an over-indulgent mother and a too-willing servant, our efforts were thwarted in abating resulting perityphlitis. I was bewildered at the copious evacuations and the daily exhibition that confronted me, for it seemed to have been next to a religious duty to save everything for my inspection.

The first alarming symptom appeared the third week of his illness, when one morning I found him pulseless at the wrist, skin pale and covered with a cold clammy sweat, eyes dull, breathing imperceptible and gasping. This state of collapse had taken place only an hour before my arrival, and it did not need any intimation to convince the mother—who was the only person present—that her boy was sinking. Having hurriedly given hypodermics of whisky and ordered bottles of hot-water, and mustard to the extremities, I drove off for Dr. Bulkley. On returning there was no change, and it seemed that further efforts must be futile. The doctor agreed with me that an abscess had burst into the abdominal cavity, which accounted for the suddenness of the attack, and that apparently the patient had not many hours to live. The treatment was continued, however, and towards evening we were rewarded by commencing reaction. The pulse gradually returned to the wrist, the skin became warm and the breathing more regular; the familiar cry for something to eat was again heard.

But now there was a formidable complication to grapple with. In a few days the patient began to lose flesh rapidly, although his digestion had not failed; he became restless and wakeful, so that hypodermic injections of morphia were the rule. His face presented an anxious look; occasionally as night approached he would become delirious; his tongue was dry and furred. Eight-drop doses of Fowler's solution were now ordered, alternated with 4 grains ferri et quinia citras three time daily, with milk punch and other appropriate nourishment. About the seventh week the parotid glands began to enlarge, and fluctuation being evident in three or four days, I made free incisions, under cocaine, just behind the lobes of both ears, making counter-incisions below the angles of the inferior maxillæ. Having evacuated the contents, amounting to about twelve ounces of putrid-smelling pus, I inserted

LEFT LAPAROTOMY FOLLOWED (A WEEK LATER) BY RIGHT LAPAROTOMY FOR SUPPURATIVE PERITONITIS,

Consequent upon Bulimia, Fæcal Impaction, Perityphlitis, and Septicæmia. Recovery. Also
on the Use of Arsenic in Septicæmia.

Read before the District of Columbia Medical Society, January 11, 1888.

BY J. F. HARTIGAN, M.D.,

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I was called on January 24, 1887, to see O. B., æt. 11, the youngest of six children. The mother said he had been complaining for several days of a "stuffy" feeling and headache, and not being in his usual spirits, she thought he needed medicine. Having found upon examination no distinctive symptoms, I prescribed on general principles a brisk cathartic, and gave instructions to inform me in a day or two should he not be better. I was called again on the 26th, and found that the medicine had acted once, but he continued dull and stupid, not caring to leave his bed. His skin was now hot and dry, tongue furred, pulse accelerated, temperature 100°, and there was tenderness over the ileo-cæcal valve, but no pain, the mischief seeming to point to impacted faeces. Repeated doses of calomel, colocynth, and aloes were ordered, followed by copious injections of castor-oil and turpentine emulsions, without results. A week from the first time I saw him, having contemplated the use of the long tube, Dr. I. W. Bulkley was called in, but upon consultation it was deemed advisable before resorting to it to try once more a large dose of calomel, and accordingly 6 grains were given

drainage-tubes through upper and lower wounds, and upon their removal within a week all traces of discharge had disappeared—the face resuming its wonted shape instead of the full-moon aspect it had previously borne.

For a week subsequently the lad became brighter, a decided mitigation in the symptoms followed, and there was reasonable ground for belief that the poison was being rapidly eliminated. But the same difficulty continued with his food; protest or argument did not avail—even a threat to abandon the case—there was always some one to bribe, or bring him a banana or pancake, or whatever there was in the kitchen, and the usual message would come for me at night to give him a corrective, or hypodermic of morphia and atropia to stem the resulting mischief. Even the collapse—which I argued was brought about in this way—did not deter the servant from continuing her pig-headed course in response to his perpetual cravings.

Towards the end of March another crisis occurred; the temperature rose to 103°, pulse was small and fluttering, skin dry, face ashy, with an anxious, drawn look, urine scanty, tongue brown, thick sordes about the teeth. In a few days the body shrunk remarkably, and an extensive bed-sore appeared, through which the posterior superior spinous processes of illi and middle segment of the sacrum almost extruded. Another development about this time, which contributed to the rapid emaciation, was the vomiting of green fluid streaked with mucus; the amount per day for two weeks averaged one pint, which was reserved for my inspection as religiously as the enormous quantities of fecal matter passed in the first weeks of his illness. There seemed to be no effort required to eject this fluid; he would call feebly or point for his basin; and apparently would vomit with the same ease that a suckling infant sometime regurgitates its milk.

When the case appeared hopeless and all our efforts to save the patient were in vain, my attention was attracted to a suspicious fulness in the left iliac region. Dr. Bulkley examined it with me next morning, and both agreed that it was pus. The propriety of laparotomy at once suggested itself. Was it advisable to do it in the face of almost certain dissolution? The mother, having been approached on the subject, left the matter with me, notwithstanding the hue and cry raised by some of the relatives and neighbors that it was cruel to operate on a dying child. The matter was discussed by the doctor and myself, and it is only justice to him to say that he did not entirely approve it—adding that I would be condemned if the child should die on the table, as was extremely probable. Seeing that there was no hope otherwise, and having the mother's consent, I held that it was an unwritten law in surgery not to let a patient die for want of an operation; so at my request the doctor consented to be present.

Accordingly, the same afternoon, having administered a full dose of stimulant, Dr. C. J. Osmun giving the ether, I made an incision three inches long over the most prominent part of the swelling. When about entering the peritoneum, which was soft and

congested, the pulse could not be detected and the breathing was hardly perceptible. While the ether was suspended and the usual artificial means were being employed to resuscitate him I completed the operation, giving exit to more than a pint of foul-smelling pus. This portion of the abdominal cavity having been thoroughly cleansed, the edges of the wound including the peritoneum were drawn together and sutured, and a drainage tube inserted. In a little while reaction was established, the skin became warm, and the pulse and breathing stronger. On visiting my patient later in the evening his condition continued to improve. He said they had not given him enough to eat since he saw me—only one chop and a couple of rolls!—and it was explained for my edification that it had not hurt him, notwithstanding the positive instructions that he should have nothing but milk punch and beef extract. Having given the usual hypodermic I left him for the night.

Next morning he was bright and cheerful, after a prolonged sleep; his bowels moved freely. Ordered balsam of Peru and iodoform to be applied to the bed-sore, instead of flaxseed poulticing, which threatened sloughing. Fowler's solution and the citrate of iron and quinine were continued. For several days the patient steadily gained ground, the wound discharged healthy pus abundantly, the emaciated limbs and thorax and shrunken face began to fill up, and there was an improved appearance of the bed-sore.

In a week, however, all was changed by a recurrence of dangerous symptoms; the temperature again rose, there was jactation, delirium, hectic, brown tongue, slight rigors, hot and dry skin. On the right side of the abdomen, corresponding to the situation in the left, was noticed another enlargement more diffuse and fluctuating. The chances of objection to a second operation being removed by the success of the first, the next day, with Drs. Bulkley and Osmun, I made a similar incision, under ether. No alarming incident occurred during the operation, which was similarly performed and which resulted in the evacuation of nearly another pint of pus; the cavity was washed out and sponged thoroughly, with antiseptic precautions, and the wound dressed after the method of the first. During the night all urgent symptoms disappeared, but the boy now showed great exhaustion. Under the judicious use of stimulants, the continuance of his medicine, and greater care with his food, he gradually merged into a state of convalescence. Both wounds were dressed daily, any retained matter being gently pressed out; as the discharge diminished they filled up, so that two weeks after the first operation one drainage tube was removed, the other following a few days later.

All anxiety was now over; the boy steadily gained flesh and strength, bed-sore healed, the tongue became clean, pulse and temperature normal—more than that his appetite became normal—so that about the 1st of May he was able to sit up. He called at my office on the 18th of May in good health, and is to-day a strong, vigorous boy.

REMARKS.—The foregoing case is unique in many respects, and is offered as a contribution towards the establishment of surgical procedure in a condition in

which the patient has heretofore been abandoned to his fate. Richter suggested more than a hundred years ago that if in the abdominal cavity milk-like fluids are formed, operation is the only remedy for removal of the disease. Whether he meant the more formidable one of laparotomy, or puncture by the trocar, does not appear; but it is certain that the latter method only has been employed until a comparatively recent date—modern surgeons, being dissatisfied with the results thus obtained, preferring laparotomy.

The first recorded case that I can find is by Bertels in 1871, who made a 2-inch incision in the abdomen of a supposed phlebotic patient, and successfully removed two wash-basins full of pus. Then followed Boye, Studensky, Krönlein, Selmer, Tait, Elias, Barwell, Marsh, Caselli, Schmidt, Roberts and others—pioneers who have placed this among the accepted operations in surgery. The cases reported are principally for perforation or consecutive peritonitis from rupture of some portion of prime vie, bursting of a pyosalpinx or pelvic abscess, Mr. Tait presenting by far the largest percentage of recoveries; but I find none with a history similar to my own, viz.: the depraved appetite, impaction of feces, perityphilitis, suppuration of the parotid glands as well as the peritoneum following septicaemia—besides the dietetic errors during treatment, which were so exasperating.

With regard to diagnosis in these cases, it is remarkable how often errors are made by men of large experience; errors which will probably be continued and, except in rare cases, be deemed excusable. I have at present on hand an illustration in which there is a history of pelvic abscess of more than two years' standing, with ankylosis of hip, following a miscarriage. Having been sent to a hospital in this city last spring for treatment, the patient was discharged by the surgeon with the statement that the institution was for the treatment of diseases peculiar to the sex, and that there was nothing the matter with her but hip-joint disease. At that time the same condition undoubtedly existed (at least in a less degree) which a month ago led to an incision by myself in the left dorsum illi, giving exit to a large quantity of pus, followed since by discharge of fecal matter. The doctor, however, is in good company, for during the late International Congress an eminent London obstetrician saw the patient and gave directions how the ankylosed hip might be overcome, losing sight of the fact that there was pelvic abscess with fistulous communication in the rectum.

The interesting question in these cases is when to operate, or when an exploratory incision should be made. I think Dr. R. S. Sutton reflects the advanced sentiment of the profession, in this respect, in the following terse paragraph:

"In short, those who have acquainted themselves thoroughly with this subject, from a clinical standpoint, are ready to open the wall of the abdomen in any case where death threatens from any cause evidently amenable to surgical procedure, or any cause which is obscure, and which can be only understood after the section is made. In many instances it is substituting an ante-mortem for a post-mortem ex-

amination. The difference to the patient is, that recovery and cure will often follow the ante-mortem examination, but recovery has never been known to follow the post-mortem examination."

Let me call attention briefly to what I consider the points of interest in my case. It may first be asked why abdominal section was not made earlier in the disease; for instance, shortly after the collapse of the third week? Of course it could not have been done at the time of collapse; and, strangely enough, when reaction followed from the supposed bursting of the abscess, there were no symptoms to justify such a course, nor were there previously, as the abdomen was flat and quite tolerant of pressure. I think the Society will agree with me that the fact that the boy rallied so well, and was free from pain and chills, as well as distension of the abdomen, precluded the propriety of such interference, and that if it had been done, and death had followed, we would not have been able to present such an interesting statement this evening.

It may be instructive to account for the green fluid vomited, the persistence and quantity of which, while it lasted, was so amazing. Of the 100 or more cases consulted, going back forty years, in which the trocar was the principal agent employed in evacuating the pus, in only two or three has this been noted as a symptom. There was costiveness and digestive disturbance frequently. Perhaps peristalsis is impeded in consequence of the effusion; the antiperistaltic motion, on the other hand, being increased, thereby produces nausea and vomiting.

The last point to which I desire to call attention is the use of arsenic in septicaemia. While a subject of this disease myself from a dissection wound about fifteen years ago, I was found roaming around aimlessly, half delirious, with my right arm seemingly twice its size, glazed and tender to the touch, and feeling like a leaden weight. I saw Dr. Schaffhirt, Anatomist of the Army Medical Museum, who advised Fowler's solution in 10 drop doses every 2 or 3 hours, and free stimulation. Before morning the change was remarkable: fever and threatening symptoms had disappeared, and I steadily gained ground, so that within three days the edema had subsided without developing into suppuration. Having had several dissection wounds since, I have always as a matter of precaution taken arsenic for about forty-eight hours, without any untoward symptoms following.

I am reminded, in this connection, of a case of acute suppuration of the knee-joint, with septicaemia, admitted to Providence Hospital about two years ago. The edema and suppuration of the thigh and leg were very considerable and extended above the hip, presenting an erysipelatous appearance.

The following is a synopsis of the case furnished me by Dr. D. P. Hickling, the then house physician, who said that as one of a similar character had died a short time before during his service, in spite of the most active treatment, and this seeming to be the worst, the prognosis was, to say the least, discouraging:

"W. C., æt. 22, white, male, entered Providence Hospital January 21, 1886, giving the following his-

tory: On the morning of January 15, while wheeling a barrow up an inclined board, he slipped and fell to the ground heavily upon his right knee, striking a stick or stubble which caused a punctured wound of the knee. He had suffered considerably since, but had not been confined to bed. When seen his condition was as follows: Tongue coated, skin dry and hot, with general prostration and considerable pain, redness and swelling in joint, extending to the hip. A brisk cathartic was ordered, and opium at bedtime, also potass. nitras for fever. Milk punch, quinine and tinct. ferri chlor. were given liberally, and opium was continued to relieve pain.

"January 24. evening temperature was 102.4°, pulse 106, tongue heavily furred, symptoms of great prostration; wound discharging freely, and general redness of leg and thigh with excruciating pain. Dr. Hartigan made several incisions for more thorough drainage of the joint, and called a consultation for the following day.

"January 25. Morning temp. 100°, pulse 100; evening temp. 101.4°, pulse 100. Prostration still great, and for constipation brisk cathartic ordered. Consultation decided that no advantage could accrue from any operation, and suggested continuance of the treatment, and thorough drainage of joint.

"January 26. Temp. (morning) 99.4°, pulse 98. Evening temp. 101.6°, pulse 94.

"January 27. Morning temp. 99.8°, pulse 92; evening temp. 102°, pulse 102.

"January 28. Morning temp. 98.8°, pulse 100; evening temp. 100.4°, pulse 100.

"January 29. Morning temp. 99.4°, pulse 104; evening temp. 102°, pulse 94. Patient's limb has been thoroughly drained under ether by numerous incisions, and washed daily with solution of bromine comp. In spite of the most stimulating treatment and nourishing diet, his general condition was critical—seemed to be getting worse every day, when Dr. H. ordered 12 drop doses of Fowler's solution three times daily.

"January 30. Morning temp. 99.6°, pulse 98; evening temp. 100°, pulse 96—the lowest evening temperature since admission.

"January 31. Morning temp. 99°, pulse 98; evening temp. 100.8°, pulse 98. Fowler's solution increased to 20 drops three times daily.

"For two or three weeks subsequently patient's condition did not vary much, except a few evenings when the temperature rose to 103°, and further drainage was necessitated. Dr. H. made altogether sixteen incisions from time to time, averaging from 3 to 6 inches long, with drainage-tubes of different sizes intercommunicating; the pus burrowed between the sheaths of the muscles of thigh and leg close to the bones, and a strong solution of chloride of zinc was substituted for the bromine and injected through the sinuses.

"After the middle of February the patient commenced steadily to improve, although occasionally there was a temporary rise of temperature. He remained in the hospital until the first week of April, when he was discharged cured, with a useful limb, and no ankylosis of the knee-joint."

I could mention other cases of septicaemia, both in hospital and private practice, where Fowler's solution was the chief treatment, with almost uniform success; but I will not longer detain the Society. 10- or 12-drop doses every four hours are not excessive until the temperature diminishes, or other symptoms improve, gradually reducing according to indications.

I believe, therefore, that, in closing, I am justified in saying that in all cases of septicaemia, or wherever there is pus, free drainage and arsenic are the key-notes to success.

CASES OF ABDOMINAL SURGERY.

1. Abscess of Liver; Incision and Drainage—Recovery.
2. Epithelioma of Oesophagus; Gastrostomy—Death.
3. Large Uterine Fibroid; Exploratory Incision—Recovery.
4. Strangulated Hernia; Resection of Intestine—Recovery.
5. Ruptured Ovarian Cyst; Ovariectomy—Death.
6. Encysted Pelvic Abscess—Recovery.
7. Double Ovariectomy—Recovery.

Read before the Philadelphia County Medical Society, April 11, 1883.

BY J. M. BARTON, M.D.,
OF PHILADELPHIA.

By invitation of your Board of Directors I submit some specimens, this evening, from cases of abdominal surgery and present the following notes for your consideration:

Case 1.—Abscess of liver. Free incision and drainage; recovery.—George B., æt. 38 years, was admitted to the medical wards of the Jefferson Medical College Hospital, July 29, under the care of my colleague, Dr. Neff. The patient was suffering with an immense abscess of the liver, extending the area of the percussion dulness to below the umbilicus and to the left of it. At the request of Dr. Neff, I removed by aspiration more than a quart of "brick-dust" colored pus, with such relief that the patient was able to return to his home in the interior of the State. The abscess cavity rapidly refilled, and he returned to the hospital, when we decided to operate by the method of Dr. Ransohoff, of Cincinnati. Making an incision through the abdominal wall, five inches in length, at the outer edge of the right rectus muscle, permitting it to gap, fastening the edges of the wound by sutures to the liver, and when firm adhesions had taken place, opening the liver by the galvanic knife. When adhesions were found to have formed, and I attempted to divide the tissues of the liver with the galvanic knife it did not act well; at first, while white-hot, it would cut readily, but the resulting very free bleeding quickly short-circuited the current and the knife became instantly cold. After repeated trials it still proved so unsatisfactory that an ordinary scalpel was substituted, with which the pus cavity was reached. An attempt to check the bleeding from the margins of the incision, by the cautery knife, was also unsuccessful, and it was only

by filling the wound with a number of rubber catheters, which happened to be at hand, that the hæmorrhage was controlled.

The abscess cavity was washed out daily with various antiseptics; it gradually closed, and the patient was discharged cured. When Dr. Neff saw him the following December, his weight was 156 pounds, his pulse beat eighty to the minute, and he had no evidence of hepatic disease.

Case 2.—Epithelioma of the œsophagus; gastrostomy; death.—John T., æt. 42 years, a patient of Dr. Joseph Lopez, of Philadelphia, was admitted to the Jefferson Medical College Hospital, December 5, 1884. He had suffered with difficulty in swallowing for one year, which had gradually increased until, at the time of admission, he had taken no nourishment whatever into his stomach for a week, and but little for the last two months. He was greatly emaciated. He could drink as much as three ounces of fluid, which would be immediately ejected with great force. A bougie could be passed readily to within four inches of the cardiac orifice of the stomach, when it was suddenly arrested.

I performed gastrostomy December 9, assisted by Drs. S. W. Gross, Brinton, Pancoast, Hearn, and others. An incision two and a half inches long was made parallel to the margin of the ribs on the left side, and about one finger-breadth from them, beginning at the outer edge of the rectus muscle. As soon as the peritoneum was opened, the stomach appeared and its identity was verified by those present; six sutures were used to bring the viscus in contact with the abdominal opening, two at each side and one at each end. Each suture was made by placing two needles upon a fine silk thread, one of them was carried between the muscular and mucous coats of the stomach for about one-third of an inch and brought out, both needles were then carried through the abdominal walls about one-third of an inch apart. Traction upon these sutures brought the walls of the stomach in close contact with the parietal peritoneum. None was tied until all the sutures were in place. A silver wire suture was introduced through the outer coats of the stomach about the centre of the portion exposed, to serve as a guide when the stomach should be opened some days later.

The patient suffered no pain or other inconvenience from the operation, and had no evidences of peritoneal inflammation, but notwithstanding that the nourishment by rectum was continued and well retained, he lost ground so rapidly and his exhaustion was so great that we opened the stomach on the second day instead of waiting for the fourth or fifth day as is customary. Immediately on opening the stomach a rubber drainage tube was introduced, and by a funnel inserted into the tube several ounces of warm milk were at once given, and through this was repeated every few hours he continued to sink and died two days later, or four after the operation.

3.—Large uterine fibroid. Exploratory incision; universal adhesions preventing removal of uterus or of ovaries; recovery.—Miss Mary A., æt. 36 years,

school-teacher, was sent to me by Dr. James Graham in February, 1885. She had a large submucous fibroid causing the uterus to rise above the umbilicus.

The increase in size was first noticed one year ago. She formerly had some irritability of the bladder which had now ceased. Her menstrual periods usually lasted about ten days. The ergot which Dr. Graham had prescribed for her was continued and operation not advised. The hæmorrhage, however, gradually increased until by the latter part of April, when I again saw her, she had been obliged to abandon her occupation, and been unable to leave her house for a month.

April 27, 1885, assisted by Drs. Da Costa, Edward, and Percy Graham, and Dr. Koons, I made an exploratory incision in the median line, between six and seven inches in length. The bladder was found entirely above the symphysis, and in the line of the incision. By pushing it downward and increasing the incision upward, I was able to gain access to the pelvis.

The uterus was greatly and irregularly enlarged and everywhere adherent to the surrounding structures. The intestines were so firmly fastened together that we were unable to find or remove the ovaries. The abdomen was closed with silk in the usual manner. The patient made an uninterrupted recovery. Full antiseptic precautions had been taken.

There are some points of interest connected with the subsequent history of this case. Though previous to the operation she almost invariably bled for ten days at each menstrual epoch and at least twice between the menstrual flows, immediately after the operation the excessive bleeding ceased, and for nearly two years she regularly menstruated but three or four days; she did not lose more than one-fourth of the quantity each day that she had prior to the operation and there was no bleeding whatever between the menstrual periods. Her menstrual periods have gradually and irregularly increased until now, nearly three years after the operation. I find in my last note made this year, "No bleeding between menstrual periods, menstruation lasts from three to ten days, when the latter the bleeding is slight most of the time." Her pains have ceased since the operation, her general health has greatly improved, and she looks much younger. Ever since the operation she has been, and is now, following her occupation as a school-teacher. Nothing was done at the operation to account for this improvement, which is great enough to have been considered quite a success, if the ovaries had been removed. The tumor is gradually increasing in size, and is now beginning to interfere with respiration.

The next case is one of so much interest that I am anxious to have it on record, though the principal part of the operative treatment was not performed by myself. The laparotomy was performed by my colleague, when I was a member of the staff of the German Hospital, Dr. F. H. Gross, during his term of service; the herniotomy by myself during my term, though we were both present, and took active part in both operations. I am indebted to Dr. Gross for permission to report this case.

Case 4.—Strangulated hernia. Operation; loss of 9 inches of intestine; subsequent laparotomy; several feet of bowel found obstructed by inflammatory deposits; bowel above the obstruction joined to bowel below the obstruction; recovery.—Frank F., *et. 18* years, was admitted to the German Hospital on the evening of March 3, 1884, with a strangulated right inguinal hernia of eighteen hours' duration. On opening the sac of the hernia 9 inches of the bowel was found to be in a sloughing condition. The ring was nicked, the healthy ends of the bowel made to protrude, and the gangrenous portion incised. We proposed, on the next day, to freshen the edges of the healthy bowel and bring them together. By the following morning the patient had developed an intense peritonitis, with a temperature of 104°, and the operation was postponed. After a week of severe illness he recovered, the sloughing bowel having separated in the meantime.

Some weeks later, as he was slowly emaciating, and the discharges looked as though the artificial anus was high up in the bowel, operative interference was decided upon. The wound was enlarged directly upward, at first but slightly, but ultimately to the extent of several inches, for the purpose of joining the divided ends of the bowel.

In the neighborhood of the artificial anus from 2 to 3 feet of intestine were found, strongly matted together with inflammatory deposits. Small projecting loops of a few inches in length were found free, with both ends terminating in the mass. The lower end of the bowel, from which the slough had separated, could not readily be distinguished from any of the other loops; and it soon appeared that it would be useless to join it to the bowel which formed the artificial anus, as it was completely obstructed at many points. As the colon was free, and a few inches of the ileum, at the suggestion of Dr. Weed, then one of the resident physicians, it was decided to join the bowel forming the artificial anus to the colon. For this purpose a small opening was made in the cæcum, and one blade of Dupuytren's enterotome introduced, the other being carried into the bowel forming the artificial anus, and the two blades clamped together. A temporary ligature was placed around both intestines while the toilette of the peritoneum was made; they were then fastened in position and the wound, about 6 inches in length, closed.

The patient did well after the operation, though it was found necessary to reapply the enterotome twice before a satisfactory opening was obtained, three times in all. The fecal fistula rapidly contracted, and when I last saw him he was able to wear a pad over it for a week without removal; his bowels acted naturally, he was free from pain, gaining flesh, and was working as elevator boy at the hospital. I heard afterward that another surgeon had attempted, though unsuccessfully, to close the fistula.

Case 5.—Ruptured ovarian cyst. Ovariectomy; death on the fourth day.—Mrs. D., *et. 54* years, a patient of Dr. Hogue, of Houtzdale, Clearfield Co., Pa., had suffered for some years with a large ovarian tumor, and though she had been advised by many physicians to have an operation performed, she re-

fused until symptoms of suffocation appeared, when I was hurriedly called upon to operate.

The abdomen was enormously distended, but did not present the typical diagnostic points of an ovarian tumor.

Dr. Hogue, of Houtzdale, his brother, Dr. Hogue, of Utahville, and two of their office students, were present and assisted at the operation. On incising the peritoneum, at once the contents of the ruptured cyst appeared in the wound. This material would not flow through a canula, and it was not until the incision had been increased to 6 inches that I was able to draw the glucose-like mass out; even then it would not run, but had to be lifted and drawn out by the hand. Of this substance there were in all about 60 pints. The abdomen was cleaned with great difficulty, the material was adherent to everything and had penetrated to all portions of the cavity. Both visceral and parietal peritoneum were thickened, roughened and nodular. The cyst was ruptured in many places, and had probably been ruptured for a long time. It had but few adhesions, and these to the omentum; its pedicle was long, and had the operation been performed before rupture, it would have been quite a favorable case. The pedicle was tied with silk, dropped, and the abdomen closed. The patient scarcely suffered from shock, though the operation was quite prolonged. After the operation she did well for two days, some of the cyst contents passing through the drain, but she perished on the fourth day, probably with septic peritonitis.

Case 6.—Encysted pelvic abscess. Abdominal and visceral peritoneum stitched together, abscess emptied and drained; recovery.—Morris S., *et. 31* years, was admitted to the Jefferson Medical College Hospital June 17, 1886. He had a tumor about the size of the adult fist, deep in the right iliac fossa, just to the right of the median line. It was regular in its outline, not very painful, though tender on deep pressure, and it was covered by the intestines.

He stated that he had noticed it for two years, and that it was nearly its present size when first discovered. He had lost flesh, but was still in quite fair health. No pulsation and no murmur could be detected. His temperature, though normal in the morning, ran up to 102° each evening. It was now considered as probably an encysted purulent collection, although there was no evidence of any disease of the spine or kidneys.

With the assistance of Dr. O. H. Allis and the house staff, I made an incision 4 inches long, beginning 1 inch above and 1 inch to the left of the anterior superior spinous process, then carried it downward and inward parallel to Poupart's ligament; about the same incision as is used for the ligation of the iliac arteries. After the muscles were divided, the transversalis fascia was separated until we were close to the growth, when fluctuation was readily detected. Carrying our incision toward the mass it was found that the parietal layer of peritoneum and that covering the abscess, though in contact, were not adherent. A series of catgut sutures and some silk ones were introduced, fastening the two layers of peritoneum

together and surrounding the proposed point of incision. After verifying our diagnosis by the exploring needle, a free incision was made, giving exit to about 8 ounces of healthy, odorless pus. A finger introduced into the abscess cavity failed to discover the cause of the collection. A large drainage-tube was introduced, by means of which the cavity was daily irrigated with antiseptic solutions; the discharge gradually ceased, and he was sent out cured July 26, 1886.

Case 7.—Double ovariectomy; multilocular cysts about 40 pounds in weight; recovery.—Mrs. Sarah Mc. was sent to me by Dr. James Graham. She was 28 years of age, married, no children, and no miscarriages. She always menstruated regularly previous to this year, during this year she had bled two or three times each month. After postponing the operation once or twice in consequence of unexpected bleeding, the third time it was performed; though she bled the night before and was bleeding during the operation. She had had no leucorrhœa, but little difficulty in micturition. No œdema in limbs or abdomen, no nausea, and no vomiting. She first noticed the tumor one year ago in the right iliac fossa, the abdominal enlargement was characteristic, the veins were enlarged, the wave was well transmitted, the uterus was small and anteverted.

Operation October 18, 1886: present Drs. J. C. Da Costa, Fisher, Graham, Koons and Gardner. The abdomen had been prepared the day before with turpentine and mercury, the latter being still on. A 2 per cent. solution of carbolic acid was used on the sponges and instruments. The incision was 4 inches in length, there was some ascitic fluid in the abdominal cavity, the cyst was multilocular and had no adhesions. Its contents were quite gummy, preventing the use of the canula; the pedicle was short and belonged to the left ovary, it was tied with silk, severed and dropped.

Another cyst, springing from the right ovary and about 8 inches in diameter, was found lying posterior to the first; it was also without adhesion and was removed in the same manner. The abdomen was cleansed with carbolic acid sponges and closed with silk as usual.

The stitches were removed on the fifth and sixth days, the bowels were moved by enema on the eighth day, the recovery was uninterrupted, the temperature never rising above 100° after the evening of the operation. The two cysts and their contents weighed about 40 pounds.

The patient was able to walk about her room at the end of three weeks.

(To be concluded.)

CANCER OF SACRUM AND LIVER SECONDARY TO CANCER OF BREASTS.

Read before the District of Columbia Medical Society, February 1, 1888.

BY G. L. MAGRUDER, M. D.,
OF WASHINGTON, D. C.

Mrs. — was first under my care for a short time

in April, 1886, for an attack of bronchitis, which was attended with some muscular debility. From this she promptly rallied. I did not have occasion to see her again until August of the same year. At this time she complained of great pain and pressure over the region of the sacrum and the left inguinal region, and down the left leg. It was almost impossible for her to remain seated for any time in any one position. She was constantly endeavoring to ease herself by throwing a portion of her weight on one side to the other by placing her hands upon the seat. Her sufferings were greatly augmented when she assumed the recumbent posture. There was no position in which she could lie with comfort. Her bowels were constipated and her movements generally accompanied with pain. Her debility was very marked. She gave no history of any preceding trouble, nor did she allude to the existing condition of her breasts. She strenuously avoided any allusion to her actual condition, but spoke only of her pain in the left leg, side, and the pressure at the lower portion of the spinal column. She endeavored to attribute her symptoms to long, close and anxious attention to her daughter and grandchildren, who had required her constant services for several preceding months. Her views at first seemed quite plausible, and a close examination was not insisted upon. Anodynes and tonics were ordered without producing any improvement, save that the pain was kept under control in a measure.

Being called away from the city toward the latter part of the month, I did not see her again until the latter part of November. In the interim Dr. Bussey had seen her several times. Her symptoms were much aggravated. In addition, about this time she had an attack of peritonitis. She had frequently suffered before with these attacks of nausea and vomiting, and her digestion was very faulty. Eructations of gas were decidedly troublesome, and it was at this time her abdomen began to perceptibly enlarge. As she would not allow a more thorough examination, it was attributed to the indigestion. As the disease progressed, and finding no improvement, Dr. Bussey was called in consultation. To the surprise of Dr. Bussey and myself, and also her family, we found schirrus tumors in both breasts, and the abdomen greatly distended with fluid. She had kept the condition of her breasts entirely a secret until that time. Her condition was such that operative interference was entirely out of the question. She would not listen to even tapping to remove the accumulated fluid. Then it was ascertained that about twenty-five years before she first noticed a small lump in one of her breasts. This did not give her any inconvenience until about five years ago, when she noticed a decided increase in the size, which was soon succeeded by the appearance of another tumor in the other breast, both of which were accompanied with a sinking in of the nipple. About two years previous she had noticed that she was not able to undergo the same degree of fatigue as before. Her back would give out; she also suffered intensely when she had a movement of the bowels. She experienced at these times a sensation of great fulness in the head.

After the date of the consultation and examination, which was in December, her decline was rapid. The most distressing attacks of nausea and vomiting repeatedly occurred and resisted all efforts at alleviation. At times the pain in the abdomen and sacrum was excruciating and required repeated doses of morphia and atropia; then again she would pass several days without having to use any anodyne. There was no paralysis at any time during her illness. Just before death there were involuntary discharges from the bowels. Death took place from exhaustion on February 18, 1887, eight months from the time of the first appearance of these annoying symptoms. There was no history of cancer on either side of her family.

Post-mortem Examination by Dr. Lamb.—Mrs. —, (white), æt. about 48. Has had a tumor of the breast for about five years. Died February 18, 1887.

Body much emaciated; lower limbs cedematous, and hard cancerous tumor in each mammary gland. The right one was small, movable, and lay to the outer side of the nipple; the left one was much nodulated and included the nipple. The *right lung* contained much serum, lymph and soft bands; the lung collapsed. The *left lung* showed old adhesions over almost the entire surface. *Heart normal*. There were 2 gallons of straw-colored fluid with flakes of lymph and soft bands in the abdomen, firm old adhesions of the viscera generally, peritoneum everywhere dotted with small, flat, whitish deposits (chronic peritonitis) and in places thickened. *Greater omentum* contracted to a cord $\frac{1}{2}$ inch thick. *Stomach normal*. Adhesions of intestines. *Liver* small, contained an abundance of white cheese-like nodules of cancer, from very small ones to $\frac{3}{4}$ inch in diameter. *Gall bladder* distended with bile—*spleen* small. *Pancreas normal*. Each *kidney* showed some thinning of cortex. *Bladder normal*. *Uterus* short and broad; atrophy of posterior lip; ulceration around os uteri. Right Fallopian tube distorted, fimbriated extremity distended into a serous cyst size of a pigeon's-egg. Right ovary showed cicatrices of ovulation. Left tube and ovary imbedded in a mass of chronic inflammation of broad ligaments. A tumor occupied the front of the sacrum, from the second to the fourth pieces (more in left side than right, and projected into pelvic cavity). It was as large as a walnut, very vascular and brittle, had a shell-like interior and large cavities within. Microscopical examination of liver and sacral tumors showed hard cancer (Dr. Gray, of Medical Museum). The primary tumor was that of the breast. Those of the liver and sacrum were secondary.

815 Vermont Ave.

MEDICAL PROGRESS.

TREATMENT OF THE CORD.—DR. A. JACOB says:

The indications for the application of the ligature, and thereby the complete interruption of fetal circulation, appear to vary in the practice and teachings of the obstetricians. When the baby has cried a few times, the majority apply the ligature and cut

the cord. Others insist upon waiting for the collapse of the cord produced by that of the vein, while the arteries are still pulsating and some will wait for the disappearance of the arterial pulse. A few facts may be remembered for the purpose of guiding the practitioner in individual cases, for the amount of blood entering, or retained in, the body of the infant is by no means an indifferent matter.

If the ligature be applied after the cessation of the umbilical pulsation, there are still six ounces of blood (192 grammes, according to Zweifel) in the placenta. If the latter be compressed by Crede's procedure that amount is reduced to three ounces (92 grams). Thus the difference between the two procedures means a difference of three ounces of blood in the circulation of the newly-born, which is an enormous addition to the usual quantity of blood, which in the infant but little older is but little more than 5 per cent. of the total weight of its body. After all, it appears that the deferred separation of the baby, when poorly developed and pale, and the admission of more blood to its system, is deserving of recommendation; while, on the other hand, there may be an occasional indication for bleeding the infant.¹

The introduction of a large quantity of blood is, however, no unmitigated blessing. The blood-vessels of the newly-born are so thin and fragile that spontaneous hæmorrhages on serous membranes and into the nerve-centres, etc., are by no means uncommon under normal circumstances. It is true that the destruction of superfluous blood-corpuscles is very rapid, as rapid, indeed, as it is known to be after transfusion in the adult, but some time is required to accomplish that end, and during that time hæmorrhages may take place, and have been reported by Neumann and Illing. This danger is sufficiently great to counterbalance the alleged observation of Hofmeier, according to whom babies, after deferred separation from the mother, lost less weight and commenced to increase sooner than those removed more speedily. However, Violet states that the former lost twenty ounces (619 grams), the latter but nineteen (585 grams).

Nor does Porak's observation, according to which congested babies exhibit a more intense degree of jaundice, lack confirmation.

If the ligature be thin, it is liable to cut through the walls of the blood-vessels prematurely; if too thick, it may not suffice to compress them satisfactorily. It ought to be applied at a distance of from one and a half to two and a half inches from the abdominal wall. Not nearer, in order to avoid the effect of the immense muscular power of the umbilical arteries inside the abdominal cavity. A second ligature is placed about an inch from the first, and the cord cut between them. It is a good rule, which must surely be adhered to in every case of thick cord, to apply an additional ligature between the first and abdominal wall, to avoid hæmorrhage from the insufficiently compressed arteries, which may take place after the cord has commenced to

¹ Archives of Pediatrics, March, page 190

shrink. The abdominal end of cord is then wrapped up in a dry and soft piece of linen, lint, or cotton, placed on the left side of the abdomen, and fastened, by means of a soft flannel bandage, which is wide enough to cover the larger part of the chest and all of the abdomen, so as not to slip.

In wrapping up the end of the cord no oil must be used. Warmth and dryness favor mummification; moisture and exclusion of air, gangrene. This holds good also for the cord when it is separated from the living baby by an additional ligature, and in the dead. Thus, the former forensic axiom, that a dry cord proved life, which prevailed for decades after Meckel had demonstrated its fallacy as early as 1853, is absolutely worthless. Thus, fatty substances, and moisture of any kind, must be avoided as much as possible. Powdered subnitrate of bismuth, or oxide of zinc, or iodoform, or salicylic acid, one part with ten parts of starch, may be dusted round the insertion of the cord and over the stump daily. The latter application is not necessarily useless (from the point of view of antiseptics), for the separation of the cord is a gradual one, and not uniform through the whole thickness of the amnion and the three blood-vessels.

The size of the sore stump and the rapidity or slowness of cicatrization depend upon the thickness of the cord, the intensity of the line of demarcation, and the reactive inflammation. The latter are most marked in vigorous infants. As a rule, the surface is dry a few days after the falling of the cord, and cicatrization complete within twelve or fifteen days after birth. This normal process is, however, disturbed by careless handling, local irritation, and infectious influences. In these cases there is a serous or purulent secretion, and cicatrization may be deferred for many weeks. Under these circumstances local treatment is required. Carbolic acid ought to be avoided, for the newly-born and infant are easily influenced by its poisonous properties. Solutions of lead, zinc, or alum answer quite well. As before, however, I recommend the powders of zinc oxide, bismuth subnitrate, alum with starch, salicylic acid with starch, or iodoform. Such measures will always prove helpful; to omit them in times of erysipelas or diphtheria is unpardonable. Perchloride of iron, or subsulphate of iron, must not be used. Under the hard coagulation formed by its application over the whole wound secretions will accumulate, cannot escape, are absorbed, and produce sepsis. I have seen babies die from applications of iron to the umbilical stump, as I know of women dying for the same reason when the hemorrhages from their uteri or from the lacerated vagina were maltreated in the same manner.—*Archives of Pediatrics*, April, 1888.

CARBOLIC ACID IN THE TREATMENT OF TUBERCULOSIS.—DR. MALGAT, of Nice, writes (*La Médecine des Ferments*, No. 33, 1888) that the numerous successes he has had with carbolic acid in the treatment of pulmonary, laryngeal, and even fistulous tuberculosis have fully convinced him of its efficacy in such cases. The two following cases are of special interest. In the first case the patient, an ex-

commandant, 48 years old, complained of gastric pains and weakness in August, 1885. Examination demonstrated that there was no serious lesion in any of the organs. The patient acquired the habit of inhaling ether to soothe the pains. In August, 1886, he had a serious affection of the stomach, from which he partially recovered. In October he began to grow thin; the appetite diminished; evening fever, nocturnal sweats, and a constant dry cough appeared. In November unmistakable symptoms of tuberculosis were observed. There were crackling sounds in the apices of the lungs; streaks of blood were detected in the sputa. The patient continued to inhale ether to soothe the coughing. In December the patient had measles followed by a severe attack of bronchitis. His condition appeared desperate, when, at the end of December, Dr. Dechat's antiseptic treatment was tried. Dr. Dechat, who was the first to administer carbolic acid internally, prescribed the following treatment: A spoonful of sulpho-carbolic syrup, three times a day, and three times a week an injection with iodo-carbolic solution. This treatment was continued during one month; considerable improvement ensued; the treatment was modified. The patient continued to take ether. He has increased in weight, recovered his appetite, and is almost free from cough. Blood was no longer detected in the sputa; nocturnal sweats disappeared. Respiration was normal; the cracklings in the apex of the lungs disappeared in February, 1887. The patient is apparently cured.

The second case was one of laryngeal granulations of tuberculous nature. The patient was pale and thin, and presented every external sign of tuberculosis. He had typhoid fever at 33. At 42 he had an attack of bronchitis; his voice failed; he coughed constantly. The appetite diminished; he grew thin; there was purulent expectoration. The back of the throat was red. A number of little yellow spots (granulations) were detected on the soft palate, the pharyngeal mucous and the vocal cords. There were mucous râles throughout the two lungs; in the apex of the right lung humid crepitating râles were detected. Percussion in the right apex gave a dull sound. On February 26, the following treatment was adopted: Three table-spoonfuls of sulpho-carbolic syrup were administered daily; two injections with iodo-carbolic solution were made every week. The patient gradually gained strength, the cough and nocturnal sweats disappeared; the appetite returned. On April 4, the patient had gained four pounds in weight. On April 24, the mucous râles had disappeared, the condition of the throat had improved, the voice was clear, and the patient had gained six pounds.

An anti-parasitic treatment with carbolic acid is now universally employed in the Paris hospitals. M. DIEULAFOY and M. DUJARDIN-BEAUMETZ have employed carbolic acid in subcutaneous injections. The former administered injections of 1 gr. at 1 per cent. with the Pravaz syringe, and succeeded in checking intermittent fever which had recurred four times in one year, and which strong doses of quinine had failed in modifying. The reason M. Dieulafoy

employed such small doses of carbolic acid was because he feared the occurrence of untoward symptoms. But it has been clearly proved that it is only when carbolic acid is not pure that such accidents are observed. M. Dujardin-Beaumetz has employed 1.0 gr. of a 2 per cent. solution, but he insists on the necessity of using pure carbolic acid. Indeed, 15 and 20 grains of such a solution may be prescribed when the acid is pure.

M. Dujardin-Beaumetz, in a lecture on carbolic acid in the treatment of phthisis, said the absorption of the acid by the pulmonary passages being out of the question, the only means of administering it is by hypodermic injections and through the digestive tube, whether by the stomach or the rectum. The digestive tube is defective in consumptive patients; any irritation of the stomach in their case should be avoided. The skin and the rectum are therefore the only means by which the acid may be safely introduced. The valuable antiseptic properties of carbolic acid, its volatile properties and its elimination by the respiratory organs, have induced many medical men to employ this substance in pulmonary tuberculosis. The injections may be made on the skin, or deep injections may be made by inserting the needle of the syringe perpendicularly into the soft parts; by this means the antiseptic liquid may be conveyed to the very spot in which the lesion exists. Professor Lépine and his pupil, Truc, tried intra-pulmonary injections in tuberculosis, with a 2 per cent. solution of creosote in alcohol. An injection with a weak solution of morphine to prevent pain was previously made. These writers recommended iodoform, by which excellent results were obtained in the treatment of tuberculous abscess. For the carbolic acid injections, a large syringe, containing 5 grains of the liquid, should be employed. A 2 per cent. solution of carbolic acid, perfectly pure and previously dissolved in glycerine (alcohol is irritating) should be used. The spots at which the injections are practised should be chosen in the anterior portion of the chest, below the clavicle. The number of incisions to be made must be determined by the particular character of the affection, but an excessive number may determine the symptoms of intoxication which have been observed after a treatment with large doses of carbolic acid, namely cold, cyanosis, collapse, vomiting, blackish coloring of the urine. These phenomena are dependent on certain idiosyncrasies of different individuals. Certain patients cannot be submitted to this treatment. In a large number of patients, however, the following results are obtained with carbolic acid: The appetite returns; the patients can leave their beds and walk out; the coughing and expectoration are modified; the nocturnal sweats frequently disappear. On the whole, although there are certain disadvantages attending the use of carbolic acid, such as the possibility of intoxication, and a certain amount of irritation, M. Dujardin-Beaumetz considers that this substance will procure relief in many cases of pulmonary tuberculosis.—*London Medical Recorder*, March 20, 1888.

AN INTESTINAL ANTISEPTIC.—Careful bacteriological studies have shown that none of the drugs ordinarily used internally as antiseptics have much, if any, potency, so far as the fermentative changes in the intestine are concerned. Calomel, bismuth, salicylic acid, naphthaline, carbolic acid, all diminish the number of microorganisms in the feces but slightly, perhaps one-fourth or one-third at the most. Given in large enough doses to be really effective germicides, they are all dangerous to life. To secure a real intestinal antiseptic, we must find a drug but slightly soluble, not readily decomposable, non-irritating, of powerful disinfectant property, and comparatively innocuous to life, even when it does reach the circulating fluids of the body. Rossbach thought that in naphthalin such a substance had been found, but in this later experience shows that he was mistaken. In a recent communication to the Académie des Sciences, M. Bouchard (*Med. Record*, 24th December, 1887) claims to have found a substance which does fill all these requirements, viz., naphthol. Naphthol is not a new drug. It has been used by dermatologists for six or seven years, and by surgeons for a somewhat shorter time. The preparation usually employed is the beta-naphthol, and this is what Bouchard uses. It is obtained from tar, and is a substance soluble in alcohol, but not in pure water. Bouchard first made a series of experiments to determine its germicidal power. With regard to pyogenic microorganisms, he found that a solution of 40 per 1000, or .04 per cent., was sufficient to prevent their development. This, he states, is one-sixteenth the strength of mercury biniodide, and five times the strength of carbolic acid. But though less powerful than mercury as an antiseptic, it has the advantage of being comparatively harmless to the human body. As the result of tests made, Bouchard states that the toxic dose of naphthol for a man weighing 130 lbs is 250 grams, or about half a pound. On the other hand, a daily dosage of 2.50 grams, or less than 40 grains, is sufficient to produce intestinal antiseptis. Toxic, not lethal, effects have only been produced when the naphthol was ingested in doses of about 26 grams. The phenomena are those of albuminuria, spasmodic muscular contractions, salivation and coma. Hemoglobinuria has not been observed. Bouchard gives the following interesting tabular statement of the comparative antiseptic power, toxicity, and dosage of several different substances:

	Antiseptic Dose per 1000.	Toxic Dose, grams.	Daily Toxic Dose, grams.
Iodoform, . . .	1.27	0.50	0.05
Iodol., . . .	2.75	2.17	1.24
Naphthalin., . .	1.51	3.40	1.00
Beta-naphthol, .	0.40	3.80	1.10

—*Therapeutic Gazette*, February, 1888.

CYSTIC TUMOR OF THE LARYNX.—DR. C. W. DESVERNE, of Havana, reports the case of a man, æt. 70 years, a Cuban, who came under treatment for chronic hoarseness and some symptoms referable to the digestive apparatus: intense epigastric pain, paroxysmal, and regurgitation of food a few minutes after eating. No family history could be obtained; the patient was neither alcoholic nor syphilitic.

There was typical bitonal dysphonia, and dysphagia from organic stricture of the œsophagus in its lower third. On laryngoscopic examination the vocal organ was normal in all its parts except the right vocal chord, the middle third of which was so enlarged as to present a general fusiform appearance. Its bilateral excursions were performed correctly, abduction and adduction being full, complete, and energetic. General tension, on the contrary, was *nil*. During efforts at vocalization the appearance of the chord was not changed, and during the utterance of liquid sounds the corresponding arytenoid was dragged and forcibly inclined towards the centre of the larynx. The color of the chord was a faded white, reflecting less light than the other. It was determined that the chord was invaded by a dense and inelastic product, and the diagnosis of interstitial fibroma and diffuse chondritis made.

The patient died of the carcinomatous infiltration of the œsophagus. Direct laryngeal inspection after death presented the same appearance as the ante-mortem examination. The fusiform enlargement occupied the anterior part of the middle third of the chord, and measured 6 mm. in its greatest diameter. It fluctuated on pressure, and a few drops of a clear mucoid liquid escaped. In the chord was a cavity measuring 5 mm. in transverse diameter, by 3.5 mm. vertically.

There is, thus far, says the author, no complete pathological and histological history of such a tumor, and he promises to publish the results of the examination of his case at an early date.—*Cronica Médico Quirúrgica de la Habana*, March, 1888.

IODOL.—ASSAKY has made a number of experiments to determine the value of this compound. It should be a yellow-brownish powder, inodorous when recently prepared, almost insoluble in water, soluble in alcohol, ether, fatty oils, and crystallizable acetic acid, and should contain from 85 to 89 per cent. of iodine.

In Assaky's hands, operation wounds that were dusted over with iodol healed by primary union. In sloughing and suppurating wounds it proved itself an excellent antiseptic, rapidly drying up all purulent secretion. Since it is not toxic it may be used in large quantities without inconvenience. It is highly probable that iodol destroys pyogenic organisms. It gives excellent results when used in and on wounds with a tendency to ulcerate, and transforms them in a short time into freshly granulating surfaces. While it is an excellent dressing for indurated chancres, it gives variable results in soft chancres.

When taken internally, in doses of from 40 centigram to 2 grams a day, it does not cause functional troubles, even when continued for a long time. It causes slight congestion of the nasal and conjunctival mucous membranes, but this disappears when large doses are taken. It does not cause albuminuria, but on the contrary, it has perhaps a curative action in some cases of albuminuria. It gives excellent results in tertiary syphilitic affections, and in surgical scrofuloses, acting more rapidly than the alkaline iodides.

Iodol may be used in powder, in a glyceric-alcoholic solution, in ganze or iodolated collodion, in ethereal solution, or it may be incorporated with vaseline or lanoline.—*L'Union Méd.*, March 18, 1888.

ICTERUS IN INFANCY.—DR. A. JACOBI says: A certain degree of yellowish discoloration of the skin is the result of the normal changes of hæmatin deposited in the skin during the rapid transition from fetal to post natal circulation. When by retarded separation of the newly-born from the mother, and compression of the placenta, the amount of blood in the circulation of the infant is unduly increased, this form of hæmatogene jaundice is rather more developed. The simplest form of hepatogene icterus is produced by the sudden diminution of the blood circulating in the vessels of the liver, which encourages the exosmotic transition of bile into the adjoining blood-vessels. All of these forms of jaundice require no treatment. Duodenal catarrh will produce icterus in the newly-born, as it does in advanced age. Thus the feeding and the digestion of the baby must be carefully watched. The routine administration of syrup of rhubarb is a mistake on the part of the female busybodies which must be discouraged. Maybe some of them can be taught that acid cow's milk and indiscriminate feeding in general, and exposure, tight bandaging, and cold feet, can do still more harm than their medicines. Icterus resulting from congenital obliteration of the large biliary ducts, or congenital cirrhosis, or acute fatty degeneration, or epidemic hæmoglobinuria is incurable. Icterus during septic infection is a bad symptom, and rarely terminates otherwise than in death. Icterus depending on congenital syphilis of the liver is grave, but I have met with several cases which recovered. A thorough and energetic antisyphilitic treatment is in such cases the only safeguard. It may prove unsuccessful, however, because the syphilitic process of the connective tissue is not confined to the liver, but extends to the rest of the organs. Mercury must be administered for a long time, a twentieth or a twelfth of a grain of calomel three times a day; careful inunction of a scruple of blue ointment daily; or one-thirtieth of a grain of corrosive sublimate in a $\frac{1}{2}$ of a per cent. solution of distilled water for subcutaneous injection daily. In the beginning of the treatment two of these medications may be combined, or one of these together with the internal administration of from three to five grains of iodide of potassium. The internal administration of the bichloride of mercury is also well tolerated; one-hundredth of a grain may be given in a teaspoonful of water, or food, every two or four hours, and continued many weeks.—*Archives of Pediatrics*, April, 1888.

WOUND OF THE LEFT VENTRICLE; RECOVERY.—A. P. KLAUWOFF reports the case of a Cossack who received a dagger-wound in the left side of the thorax. A physician that saw him almost immediately found him lying on the ground, unconscious, and with stertorous breathing. The chest was covered with blood, and in the 4th intercostal space, in

the mammillary line and parallel to the border of the ribs, was a wound 1.5 inches long, from which blood was still flowing. The wound was cleansed, a compress put on, and restoratives applied, after which the patient became conscious. On the next day his general condition was good; pulse 90 and small, temperature 37.8 C. Percussion showed the upper boundary of heart-dulness in the 4th interspace, and the impulse was faulty. Lower percussion boundary at the upper border of the 7th rib. Right boundary reached beyond the right parasternal line, and the left boundary about 3 cm. beyond the left mammillary line.

On the third day the patient was taken to a hospital, which he left, cured, after four weeks. Five days after leaving the hospital he suddenly dropped dead while trying to lift a heavy object. The autopsy showed the heart-wound completely closed, and the outer layer of the pericardium adherent to the chest-wall. The pericardium was filled with dark blood; on the left ventricle was a gaping wound 1.4 cm. long, the edges of which were thickened, and the neighboring muscular tissue in a state of slight fatty degeneration; subacute endocarditis. The case, then, was one of healed wound of the left ventricle, but the patient died from too early strain on his weakened heart. The cicatrix was too new, and the endocarditis had not passed off. The heart could not stand the strain of a sudden inrush of blood, and the cicatrix ruptured. This makes 7 per cent. of recoveries of recorded cases.—*Centralblatt für Chirurgie*, No. 12, 1888.

THE SOLUBILITY OF BORIC ACID.—According to Schultze calcined magnesia has the property of forming with boric acid a salt composed of several molecules of the acid to one of magnesium oxide. According to MANSIER the solutions consist in a dissolution of polyborate of magnesium in the dissolved boric acid, or *vice versa*. The desired quantity of boiling water is poured on a mixture of magnesia and boric acid placed in a covered vessel.

Boric acid.....	50 grams.
Calcined magnesia.....	1.25 "
Distilled water q. s. ad 1 litre.	

By adding 1.25 grams of magnesia to every 10 grams more of boric acid we have:

Boric acid.....	120 grams.
Calcined magnesia.....	10 "
Distilled water q. s. ad 1 litre.	

This solution remains clear at 15° C. When 1.50 grams of magnesia are added for each 10 grams of boric acid there is no precipitate at 12° C.

These solutions may be used for washing out the bladder, and for general dressings. For some time Guyon has used a solution of 50 grams to the litre, maintaining this degree of concentration by the addition of 5 grams of borate of soda, provided the temperature of the solution does not fall below 18° C.—*Annales des Mal. des Voies Gén.-Urin.*, February, 1888.

HAIR-TUMOR OF THE STOMACH.—JOHN BERG reports the case of a married woman, æt. 26, who had

suffered for three years with symptoms of dyspepsia and anæmia, and with attacks of vomiting of glairy mucus. For two years there had been noticed a tumor in the epigastric region, and it had grown more rapidly during the last six months. She entered the Seraphim Hospital in Stockholm on May 31, 1887. In the epigastric and left hypochondriac region, between the prolongation of the parasternal line and the left mammillary line, was a tumor as large as the hand, with a concave upper, and convex lower border. It could not be displaced towards the region of the kidney. The spleen was in its normal position. Laparotomy showed that the tumor was in the stomach, which was opened by an incision 6 or 8 cm. long parallel to the greater curvature. The tumor was composed of hair, short and long, forcibly compressed. It was cut up and removed piece meal. The whole weighed about 900 grams. The wound was closed by twenty-three sutures, in two rows. Union by first intention, and complete recovery. The mother of the patient said that when about 3 years old she had a habit of chewing hair, but the patient denied having done so since she could remember. With the cases of Schonborn and Knowsley Thornton this makes three cases of operation, all successful, for hair-tumors.—*Nordiskt Medicinskt Arkiv*, Bd. xix, No. 25.

SALOL IN DIARRHŒA.—DR. O. T. OSBORNE, of New Haven, gives salol every two hours in acute diarrhœa, until the stools cease. The indications for the drug in bowel troubles are vomiting, purging, cramps, "summer diarrhœas" of children, and Dr. Osborne has found it useful in prolonged diarrhœa and in one case of dysentery. He has used it most frequently in the diarrhœa and vomiting of children, and in every case with success, the stools becoming infrequent immediately, assuming their natural color, and losing their offensive odor. To a child under 2 years he gives gram .05 (gr. $\frac{3}{4}$); from 2 to 5 years .1 gram (gr. jss); 5 to 12 years .2 gram (gr. iij); and to all above 12 years .3 (gr. ivss).—*N. Y. Medical Journal*, April 7, 1888.

PALPERRAL ECZEMA.—LAILLER recommends the following:

Crystallized acetic acid.....	2 parts.
Glycerine.....	50 "
Cherrylaurel water (dist.).....	200 "

To be painted on the eyelid once a day. The brush should be slightly resistant, and the mixture carefully applied.—*Riforma Medica*, March, 22, 1888.

QUEBRACHO IN DYSPEPSIA.—ELLIS has found the following formula useful:

Syrup of prunes.....	
Syrup of tolu.....	
Fluid ext. of quebracho aa.....	grams 30
Dilute hydrocyanic acid.....	gtt. 25
Sulphate of morphia.....	centig. 3

One teaspoonful, to be repeated if necessary.

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SATURDAY, APRIL 28, 1888.

SURGERY OF CEREBRAL TUMORS.

One of the most valuable and exhaustive papers ever presented to an American society was read by Drs. SEGUIN and WEIR before the Academy of Medicine, of New York, on April 5. It was entitled "A Contribution to the Diagnosis and Surgery of Cerebral Tumors;" the surgical portion being supplied by Dr. Weir, who successfully performed the operation in the very interesting case upon which the paper was based.

The patient was a male, 39 years of age, who was sent to Dr. Seguin by Dr. Godfrey, of Bridgeport, Conn., last August. He had good health until five years ago, when during an attack of malarial fever he had a spasm of the right side of the face and neck. The next year he had another similar seizure, and later there were others; in none of which were any spasmodic movements of the hand or arm. Two years ago the symptoms became more marked, and the attacks assumed the character of general epileptic convulsions. Dr. Seguin found that the lower facial muscles in the right side and the muscles of the right arm were parietic, and that there was some loss of power, with very slight tactile anæsthesia, in the right hand. Speech was almost wholly suspended, but mental action was accurate. The pupils and the optic nerves were normal. He made a diagnosis of a tumor of the motor zone of that portion of the motor zone of the left hemisphere containing the centres for the face and neck, and was inclined to believe that the lesion was a medullary one from the absence of headache.

The symptoms were constantly growing more aggravated, and, an operation being advised, he came to New York in November and was admitted as a private patient at the New York Hospital, where, on November 7, the operation was performed by Dr. Weir under strict antiseptic precautions, including the spray. Before trephining a minute perforation was made in the scalp at the point indicated by Dr. Seguin for the opening in the cranium to be made, and through this the place was marked on the skull by means of a colored pencil. Flaps of the scalp were then reflected back, and the two buttons of bone, each about an inch in diameter were removed with the trephine; after which other pieces of bone were removed with the *rougeur* until the cranial opening was three inches in length and two inches wide, on the auriculo-bregmatic line. Careful exploration revealed nothing abnormal at first, but afterwards firm pressure posteriorly revealed the presence of a small hard mass about .75 inch beneath the surface of the brain. It was about as large as the end of the finger, and was scooped out by means of a Volkmann's spoon. A smaller mass was then discovered and removed, and the dura mater was stitched. The wound having been given a final washing with bichloride solution (1:5000) the discs cut with the trephine and other pieces of bone removed, which had been carefully kept, were replaced and the scalp sutured with catgut. The operation lasted 1.75 hours, the time being prolonged by the difficulty met with in controlling the hemorrhage incident to the procedure. The tumor was found by Dr. Peabody to be an infiltrating sarcoma. The after history of the case was given by Dr. Seguin. For a short time after the operation there was almost complete hemiplegia and aphasia, but afterwards these disappeared, and the general condition of the patient was about the same as before, although there was now no driling from the right corner of the mouth, which had been previously a marked symptom, and there was more power in the muscles of the cheek. He had no convulsive attack from the day of the operation to December 8, and after that he had two others before his return to Bridgeport, on December 17. He came to New York on January 23, and stated that he had had no marked attack during the last two weeks. In the latter part of February an unfortunate complication occurred in the shape of a very severe onset of malarial fever, accompanied with marked jaundice, and but for this Dr. Godfrey believed that he would not have had any convulsive seizures during the last six weeks.

While we have been accustomed to attribute the

first conception of this operation to English surgeons, it seems that priority as regards the operation really belongs to Professor F. Durante, of Rome, who published in the *Lancet*, of October 1, 1887, a communication presented to the Surgical Section of the Ninth International Medical Congress at Washington, in which he modestly reported a case in which he operated as early as May, 1884. Three months afterward he presented the patient, a woman 35 years of age, to the Chirurgical Society at Perugia, and she is now, four years after the operation, in perfect health.

As may be seen by our New York letter of this week, Dr. W. W. Keen, who was present at the discussion before the Academy, related some particulars of an interesting case in his own practice, and that he agrees with Horsley as to the advisability of administering morphine in these cases, in order to diminish the supply of blood to the brain.

In regard to drainage in these cases, it will be remembered that Horsley says it should not be maintained for more than 24 hours. Dr. Keen thinks this rule correct save in exceptional cases, as in his case, on account of the large clot, and the discharge that followed it.

THE NEW YORK QUARANTINE STATION.

Mayor Hewitt has written a letter to the chairman of the Committee on Finance of the State Senate in regard to the future management and condition of the quarantine establishment of the port of New York. Having referred to the threatened outbreak of cholera last autumn, and the present inadequate appliances of the station, he states that under the circumstances he feels it his duty to impress upon the Legislature the necessity for action and for the appropriation of a sum of money sufficiently large (estimated at about \$200,000) to put the quarantine establishment in a thoroughly efficient condition. If, however, it is deemed wiser to transfer the responsibility to the city of New York, he feels sure that public opinion will justify the expenditure by the city of the amount required; in which case the quarantine fees would, of course, be paid into the city treasury. The city Board of Health, he says, is so situated at the present time as to be able to take charge of the establishment and to give it such direction and supervision as will protect the public from disease. With this timely warning, in addition to the various reports that have been made to it previously in regard to the inefficiency of the present quarantine appointments, the Legislature ought certainly to be stirred up to take proper action in the

matter. The quarantine bill recently passed, which has now received the Governor's signature, will have some effect in improving the state of affairs in the harbor; but it does not provide the financial means for at once placing the station in a thoroughly efficient condition.

RAILROAD ACCOMMODATIONS TO CINCINNATI.

We are assured that a large number of the members of the profession in this city are intending to attend the annual meeting of the American Medical Association to commence in Cincinnati on Tuesday, May 8, 1888. The Chicago Medical Society alone is entitled to more than forty delegates, and members of the local societies will doubtless increase the number to fifty or sixty, without counting many permanent members who can attend without special appointment. All the railroads have agreed to pass physicians and members of their families for one full fare going, and one-third fare on returning over the same route, as stated in detail in *THE JOURNAL* of April 7, page 439. They will commence issuing the tickets with certificates three days before the meeting, and the return tickets will be good until three days after the close of the meeting on the 11th of May. Since writing the above we have received the following telegram from Drs. Geo. C. Purviance and Wm. Judkins, of Cincinnati:

"Delegates attending meetings over railroads that are in Trunk-line Association will receive return certificates here. Circulate above freely."

THE DEATH OF DR. C. R. AGNEW.

DR. CORNELIUS R. AGNEW, beloved by all who knew him, esteemed wherever his name was known, uniting, as few physicians have done, so much learning with so many noble and generous traits of character, so much modesty with such self sacrifice in the hour of duty, has left vacant the place in the profession that he has so long honored. Whether in his home, among his patients, in the lecture room, before his colleagues, or in the service of his country, he was the same calm, dignified, learned, charming, Christian gentleman.

SMALL-POX.—From the weekly abstract of Sanitary Reports, of the office of the Supervising Surgeon-General of the U. S. Marine Hospital Service, April 20, 1888, we learn that sixty cases of small-pox and four deaths had been reported in Philadelphia up to April 18; seventy-nine cases reported on the 19th

in New York; forty-one cases and seven deaths in Brooklyn to the 20th, thirty-eight of which were in the county hospital, and three isolated in the City; and in Jersey City, N. J., thirty-eight cases and two deaths had been reported up to March 30, since which date no new cases had been reported. It is evident from the repeated, though limited, outbreaks of this disease in a large number of the cities of Europe and this country, that the present is a genuine epidemic season for variola, and it becomes the duty of every physician to actively aid in extending the protective influence of vaccination among all classes of the people, and in exercising vigilance in promptly detecting and isolating any cases with which they may come in contact.

M. HIPPOLYTE BROCHIN, editor in chief of the *Gazette des Hôpitaux*, and Dean of the medical press of France, as he was called, died recently in Paris in his 80th year. In 1837 he began his editorial career on the *Gazette Médicale de Paris*, and left it in 1854 to take charge of the *Gazette des Hôpitaux*. He contributed several articles to the "Dictionnaire Encyclopédique des Sciences Médicales," was active in sanitary matters, and was at the post of duty in the four cholera epidemics of 1835 in Marseilles, and 1840, 1853, and 1854 in Paris.

THE FEMALE PHYSICIANS OF RUSSIA recently celebrated the tenth anniversary of their professional existence, by a banquet. A large number of professors and eminent medical men were present. Professor Botkin said that there was a sort of instinctive divination proper to the brain of women, and that this faculty should prove valuable in diagnosis. Professors Rauchfuss and Tarnowski also made remarks.

EDITORIAL NOTES.

AN INTERNATIONAL CONGRESS OF OTOTOLOGY will be held in Brussels on September 10-16, 1888.

GIRAUD-TEULON, one of the best known of French ophthalmologists and optical physiologists, is dead.

STADELMANN, Privat-docent of internal medicine at Heidelberg, has been called to Dorpat.

GAZETTE DES HÔPITAUX DE TOULOUSE is the name of a new medical journal published in Toulouse, France.

PRINCE CHUN, father of the present Emperor of China, when very sick some time ago, called in Dr.

Manson, of Hongkong. This is said to be the first time that any member of the Royal family in China has ever consulted a European physician.

REVUE PRACTIQUE D'OBSTETRIQUE ET DE L'HYGIÈNE DE L'ENFANCE is the name of a new journal that has appeared in Paris. It is edited by MM. Varnier and Legendre.

PROFESSOR TITO VANZETTI, the eminent Italian surgeon of Padua, died on March 6, aged 78 years. He left \$20,000 and a magnificent library to the University of Padua.

THE CRANIA OF MOZART, BEETHOVEN, GLUCK and SCHUBERT are to be examined by Professors Toldt, Meynert, and Kundrat, and Dr. Weisbach, a Committee of the Anthropological Society of Vienna.

ASSOCIATION ITEMS.

THIRTY-NINTH ANNUAL MEETING.

To be held in Cincinnati, Ohio, May 8, 9, 10 and 11, 1888.

PRESIDENT, A. Y. P. GARNETT, M.D.,
of Washington, D.C.

PAPERS AND DISCUSSIONS.

The following additional titles of papers to be read at the approaching meeting have been received since the programme was published in the issues of THE JOURNAL for April 7, 14, and 21:

Section on Ophthalmology, Otology, and Laryngology.

"Report on the use of Jequirity," by J. P. Worrell, Terre Haute, Ind.

Section on Obstetrics and Diseases of Women.

"Renal Tenesmus; its Successful Treatment by Kolpo-Urethro Cystostomy and Intra-vaginal Drainage combined with Uterine Support," by Nathan Boezeman, New York.

Section on Practical Medicine, Physiology and Therapeutics.

"Mullein in the Treatment of Malarial Troubles," by Geo. Byrd Harrison, Washington, D.C.

Railway Arrangements.

PAN HANDLE ROUTE.—Attention is called to the advertisement of the Pan Handle Route on page 9 of this issue of THE JOURNAL. The Pan Handle is the pioneer through car line to Cincinnati, and is a portion of the Pennsylvania lines west of Pittsburgh, which should be a sufficient guarantee that any one patronizing the Pan Handle will have a pleasant and comfortable trip to Cincinnati.

MONON ROUTE.—The announcement of the Monon Route appears on page 8.

THE KANKAKEE LINE.—This popular and direct

line has made arrangements to run trains for the meeting of the Association at Cincinnati. The times of departure and arrival are as follows: Leave Chicago at 9.10 A.M., arrive at Cincinnati 7.15 P.M.; leave Chicago at 8 P.M., arrive at Cincinnati 7.30 A.M. Parlor cars on day trains, Pullman Sleepers and Reclining Chairs on night trains. This is the only line from Chicago entering the Grand Central Depot at Cincinnati, which is situated in the heart of the City, and in the immediate vicinity of the hotels and business centre. Rates of fare same as on other lines. For further information call at city ticket office, 121 Randolph St., Chicago, or address J. C. Tucker, Gen'l. N. W. Pass. Agent.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, April 5, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

DR. T. M. DRYSDALE reported a case of

MULTILOCULAR PAPILLOMATOUS TUMOR OF THE BROAD
LIGAMENT PRODUCING OBSTRUCTION OF THE BOW-
ELS. OPERATION. DEATH FROM UREMIA,
AUTOPSY DISCLOSED ONE KIDNEY CON-
VERTED INTO A CYST AND THE
OTHER DISEASED.

At the request of her physician, Dr. A. G. B. Hinkle, I was sent for January 7, 1888, to see Mrs. M. I. K., a widow, æt. 54. She stated that she was the mother of seven children, and that her labors had invariably been hard and tedious, accompanied with violent abdominal cramps. The menopause occurred when she was 46 years old. She had always been strong, worked hard, lifted heavy weights, and had had no sickness in thirty-five years until last March, when she was seized with intense pain in the abdomen together with obstinate constipation. She continued to suffer for several weeks, and her physicians had great difficulty in getting the bowels moved; medicines had so little effect that her life was despaired of, but she was finally relieved by copious purgative injections. Her disease was at first supposed to be owing to sewer-gas poisoning, as her son suffered in a similar manner at the same time, and they were treated accordingly; but, finding they did not improve, a consulting physician made a more thorough examination and found well-marked blue lines on their gums. They were then treated for lead colic and soon recovered. The son had remained well ever since, but she had suffered from colic and constipation, while the abdomen had continued permanently swollen. Her bowels never moved satisfactorily, as only a portion of the contents seemed to come away, leaving the upper part of the intestine full. Last August she first felt a hard tumor low down in the right side. Her abdo-

men since then had increased rapidly in size, while the rest of the body emaciated. Her appetite had been good and she had no pain after her meals, but felt too full to eat much. She had constant eructations but no vomiting. Until recently she had a slight daily movement of the bowels, but for several days past she had had no evacuation. During all this time she had suffered from what she supposed was colic and, in fact, was never free from pain. Just before I saw her she had taken a dose of castor oil, and at my visit was in great agony at the distention.

She was thin and anæmic, and her complexion had the cachectic appearance of malignant disease. The centre of her tongue was red and smooth. The abdomen was greatly enlarged, and resonant on percussion everywhere except below a line halfway between the umbilicus and pubis, there it was dull and fluctuation could be detected. In the right iliac region I found a hard nodulated tumor which appeared to be moderately movable, but so rigid was the abdominal wall that it was difficult to determine this with certainty. The bladder was prolapsed and projected between the thighs, but the uterus remained within the shortened vagina and was held up, apparently, by being fixed to the tumor. The uterine sound entered 2 inches and passed to the right. As well as could be made out, the uterus and tumor were closely adherent. Rectal examination revealed a firm immovable tumor occupying the upper part of the pelvis. The examination, although made with the utmost gentleness, caused great pain. As frequency of micturition was a prominent symptom, Dr. Hinkle had more than once examined specimens of her urine but, finding nothing abnormal, concluded that the irritation was owing to the prolapse of the bladder. As usual before an operation, I also examined two specimens of the urine and found it free from albumen and sugar, with a sp. gr. of 1.20. She assured me that she passed the normal quantity.

The oil operated and gave her relief for twenty-four hours, but after this she grew rapidly worse, the symptoms of obstruction of the bowels increased, and by January 17, just ten days from my first visit, I was again sent for, and found that she had been in such continual agony that she had concluded to submit to an operation. The abdomen was extremely hard, and in place of being tympanitic was everywhere dull on percussion, and fluctuation was general, showing that a rapid effusion of fluid had occurred.

In the presence of Drs. Hinkle, James F. Wilson, I. Howard Beck and G. B. McCracken, and assisted by my son, I operated January 22, 1888. The incision was followed by the escape of about a gallon of ascitic fluid. The peritoneum was slightly inflamed and in some parts thickened. The growth proved to be a multilocular papillomatous tumor of the broad ligament. It filled the lower part of the abdomen and the right side and occupied the upper portion of the pelvis. Its color was not the opaque white of an ovarian cyst, but resembled in this respect the intestines. The main cyst extended upwards as high as the border of the lower ribs. To this the omentum and a loop of intestine were firmly adherent. These

adhesions were detached and the cyst drawn forward. As this was being done it burst and discharged a large quantity of red serous fluid, for, as usual, the cyst walls were very thin and easily ruptured. Two other large cysts below this were tapped, which greatly reduced the size of the tumor, but a mass of others remained, filling the upper part of the pelvis, to which they were firmly adherent. This was the portion which, by pressing on the bowel as it passed the pelvic brim, obstructed it. Here it was difficult to separate the tumor from the surrounding structures without injury to them, for it was adherent to the bladder, bowel, and everything it touched. After freeing it from all its other attachments without doing mischief, save to some vessels on the floor of the pelvis, which bled profusely, I found it was firmly bound to the uterus, which it dragged down and held close to the uterine wall of the pelvis, deep down on the right side, by an exceedingly short, firm and vascular attachment or pedicle, which I ligated with great difficulty owing to its depth in the parts. The tumor with its capsule was then removed. This revealed a set of bleeding vessels below the pedicle, which were secured after considerable trouble. Before closing the wound the abdomen was thoroughly cleansed by irrigating it with warm water which had previously been boiled. The operation was tedious, lasting over an hour, and through it all the pulse was well maintained, but it was followed by a profound shock, shown in the pale face and thready, almost imperceptible pulse. As soon as she became conscious she complained of intense pain in the back. Under the use of stimulants and the external application of heat she reacted in about an hour.

At 5 P.M., four hours after the operation, the nurse applied the catheter and removed $1\frac{1}{2}$ ounce of urine.

At 8 P.M. Dr. Hinkle and I visited her and used the catheter, but the bladder was empty. Her pulse was 112, temp. 100.2° , which was the highest it reached. She complained of feeling sore all over. To relieve the suppression of urine we ordered a mustard plaster, made with warm water, to be applied over the kidneys, and prescribed a tablespoonful of the following mixture, well diluted with water, to be taken every four hours: R. Potassii acetatis, \mathfrak{ss} ; spiritus ætheris nitrosi, $\mathfrak{f}\mathfrak{ss}$; aquæ distill., $\mathfrak{f}\mathfrak{ij}\mathfrak{j}\mathfrak{ss}$.

10:30 P.M., she vomited for the first time.

12:15 A.M. After an ounce of urine was drawn she became restless and complained of severe pains in the abdomen, which continued until Dr. Hinkle was sent for at 2:15 A.M. He found her with a pulse of 94 and temp. of 100° , and gave her a hypodermic injection of $\frac{1}{6}$ of a grain of morphia. After this she slept until 5:30 A.M., when the nurse drew her urine and obtained \mathfrak{ss} .

Monday, 10:45 A.M. Pulse 118, temp. 98° . Since 7:30 A.M. had been in pain and had vomited several times. The catheter had just been used and about a teaspoonful of urine drawn. The abdomen was tympanitic, but not tender on pressure. The rectal tube was used, which permitted a large quantity of flatus to escape. After this the diuretic was used by injections and retained. We directed 1 drachm of Rochelle salt to be given every two hours, and to have a hot vapor bath.

2 P.M. Pulse 130, temp. 97° . Had vomited everything. $\frac{1}{4}$ gr. of calomel and a tablespoonful of very hot milk were then given every hour. This quieted her stomach. At 4:50 P.M. $1\frac{1}{2}$ ounce of urine was drawn. She continued drowsy, but did not sleep.

9:30 P.M. One drachm of urine was removed.

Tuesday, 10:30 A.M. Pulse 130, temp. 96° ; skin cool and pale. The catheter had been used at 2 P.M. and at 9 A.M., and each time about a teaspoonful of urine was obtained. The stomach continued quiet until 8 A.M., then she vomited occasionally. Stimulants were used by the rectum, but she continued to sink and died at 6 P.M.

The autopsy was made the next evening by Dr. McCracken, who kindly furnished me with the following note of it: The wound in the abdominal wall was firmly united throughout its whole extent. A moderate amount of peritonitis existed, confined principally to the lower part of the anterior abdominal wall and the lower coils of intestines, which were covered with a thin layer of pus. This was the portion of the peritoneum which was found inflamed when the abdomen was opened at the operation. The pedicle and surrounding parts from which the tumor was detached were in excellent condition. The right kidney was sought for, but could only be detected after a prolonged search, when it was found to have been converted into a large elongated cyst, only a small portion of the upper part of the organ remaining unchanged. It resembled a distended bowel so closely that it was difficult to distinguish it from the surrounding intestine.

The left kidney was enlarged and intensely congested. When the adherent capsule was removed the surface of the gland presented the rough granular appearance of inflammation. There were a number of small cysts in the cortical substance.

This case presents several features of interest, one of which was the steady decline in temperature from 100.2° on Sunday to 96° on Tuesday morning, but I have brought it before you mainly for the purpose of showing how we may be deceived in regard to the condition of the kidneys, even when all signs of disease are absent in the secretions. This patient's life was dependent upon the active exercise of one organ which itself was diseased and struggling under the load thrown upon it as the only eliminator of its kind in the body. It naturally followed, then, that when the toxic effect of the ether was added to its burdens, it yielded and the patient died.

DR. PARISH spoke of the toxic effect of ether on diseased kidneys, and wished to know whether Dr. Drysdale had been able to determine the renal condition in his case. He had some years ago had a case of Porro-Müller operation in which there was parenchymatous renal disease and in which death resulted from acute suppression of urine. It was a serious question as to what anæsthetic we should use under similar circumstances. The tumor presented by Dr. Drysdale was peculiar for a cyst of the broad ligament on account of the large amount of solid matter connected with it.

DR. J. PRICE said there was but one authority who made any mention of the condition of the temper-

ature under ether. Some years ago Dr. Burk had taken the temperature of a large number of patients under the anæsthetic, and found that there was invariably a depression from 1° to 2° due to cessation of combustion. The symptoms of obstruction of the bowels as presented by Dr. Drysdale's case were very characteristic. He had lately been dealing with some very trying cases of this kind, and pain was always present and very severe; in several cases shock and collapse had been marked symptoms of the obstruction.

DR. DRYSDALE did not think that the decline in temperature was due to the anæsthetic, but believed it depended upon the uræmia, as he had repeatedly noted a similar depression in advanced stages of Bright's disease. The urine had been examined several times and nothing found to indicate disease of the kidneys; in fact, there was not a single symptom present to excite suspicion of trouble in these organs, except the constant inclination to micturate, for which the prolapsed bladder was sufficient to account.

DR. HAMILL read the following notes:

Hæmorrhage into the placenta, or placental apoplexy, is not of rare occurrence. In the earlier stages of placental development the maternal capillary loops thrown into a network around the chorionic villi not infrequently rupture, with a consequent effusion of blood over a greater or less area, and at a later period of intra-uterine development the blood current in the intervillous blood spaces, at all times sluggish, may become so very slow that the blood coagulates and at birth there may be seen a clot of varying extent, more or less perfectly organized, and in some cases presenting just the laminated appearance that one sees in an aneurism undergoing obliteration.

Rupture of the umbilical vein in the cord, with a rather extensive effusion of blood, has also been noted, but here the quantity of blood that can escape is of necessity limited to the comparatively small capacity of the cord. In the case that I would report to the Society the apoplexy of the placenta was of fetal instead of maternal origin; the ruptured vessel was one of the large branches of the umbilical vein running across the fetal surface of the placenta, and the quantity of blood effused must have left the fetal body absolutely exsanguine. All these circumstances make the specimen a rare one, the last two make it quite unique as far as my knowledge goes. An extended search through medical literature has failed to show me a similar case. Unfortunately I am unable to find a cause for the rupture of the blood-vessel; there was nothing in the condition of the fetus, nothing in the history of the mother, that would account for it.

DR. HIRST was greatly pleased to see the specimen, and thought it unique. There was one somewhat similar described by Bandelocque.

DR. KELLY remarked that he had in his possession the placenta and membranes from a case recently delivered, in which moderate traction on the cord, after separation of the child, resulted in a large hæmorrhagic extravasation between the placenta and the amnion. This was found, upon careful ex-

amination, to come from a minute rupture in the vein on the placenta part as it left the cord, about two millimetres in length and transversely to its axis.

DR. J. PRICE had recently had a case in which death to the fetus had occurred from pure hanging. The cord was twice wrapped around the child's neck and there was a deep indentation in the fetal tissues. The cord was shortened at least one-half.

DR. HAMILL also read the following: "The occurrence of morning sickness in the husband after the fact of pregnancy is known or suspected, I have frequently noted. The case I would report is unique from the fact that the sickness appeared in the husband at such an early period of pregnancy. Two weeks after the appearance of menstruation for the last time, the husband had daily morning attacks and not until it was time for the next menstruation had the woman any other evidence that conception had taken place, and then she failed to menstruate. The husband continued having the attacks for two months. During previous pregnancies the husband had suffered from the same attacks, but not until they were both cognizant of the fact."

DR. WM. GOODELL remarked that Sir Francis Bacon had written some line on this subject, the substance of which was that "loving husbands so sympathize with their pregnant wives that they have morning sickness in their own persons." A writer in the *Lancet*, of May, 4, 1878, p. 666, also refers to a case in point which occurred in his own practice. In this case the husband's nausea and vomiting began and ended with his wife's.

(To be concluded.)

GYNECOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, December 15, 1887.

VICE-PRESIDENT H. C. WHITE, M.D., IN THE CHAIR.

DR. HELEN L. BETTS read a paper entitled
WOMAN'S DRESS; ITS RELATION TO THE ETIOLOGY AND
TREATMENT OF PELVIC DISEASE.

(See p. 509.)

At the conclusion of the paper Dr. Betts exhibited to the Society specimens of the garments recommended and worn by the women interested in dress reform. The undergarments are in one piece, and fit the form throughout. Over this is worn a long waist accurately fitted to the figure, to which are buttoned the skirts by a distinct row of buttons for each. The waist-bands of the skirts are of the same length as the circumference of the waist, so as to avoid any constriction. Shoulder straps for supporting the skirts will not take the place of the full waist, as by their use the weight is brought upon two small points and they become intolerable.

DR. E. C. KELLER said that it was possible for a woman to look as trim and neat in the dress recommended as by use of the corset. This dress is almost exactly like that of childhood.

DR. L. F. WARNER said that the paper was a good one, and should be of great practical value. His ex-

perience had been that it was impossible to secure any change in the manner of dress among women. The constriction about the waist interferes with the return of blood from the pelvis, and leads to congestion with consequent enlargement of the uterus and other pelvic organs. The corset presses these organs out of their natural place and relation and adds to the difficulty. Children are, as a rule, well and strong until their approach to puberty is supposed to demand the use of corsets. These vicious habits of dress ruin nine-tenths of our young women. Women, as a rule, dress to outdress one another, but the men are to blame because they do not lend their influence in behalf of a more sensible and rational system of dress.

DR. A. P. CLARKE said that it would be up-hill work to secure any radical change of dress simply on the ground that the present modes are deleterious to health; but that if we could persuade our patients that the new style of dress will improve the form we may be more successful.

DR. W. S. BROWN said that the subject of the paper was new and important. He believed that the great expense was one great objection to the new mode of dress. The "union" garment and others recommended are three times as expensive in this country as in England. The nearer any style of female apparel approaches to the trousers the better it will be. Dr. Brown would not strive to secure a change in the fashionable mode of dress, but would aim to radically change the working dress of all classes, so that work can be done without loss of strength. There are many elements influential in producing the common ill-health among girls: indigestion, lack of proper nutriment, over-pressure in school, all have their pernicious influence, and the vicious habits of dress may prove to be the last straw which breaks the camel's back.

DR. E. W. CUSHING called attention to the radical differences between the rural classes of this country and Europe in regard to manner of life and habits. The working women in foreign countries, as Germany, do not wear any such dress as the rural population in this country. Foreign women wear boots and short skirts supported by broad hips. The habits of outdoor work by women in this country have passed away, and the class of women corresponding most closely to the foreign peasant has sought to assume the dress of polite society, with all its faults.

Dr. Cushing believed the corset to be a classical garment, and that women would always wear some such garment to support the breasts. The human race is not yet entirely used to the erect posture upon two legs. The veins of the pelvis are valveless and the erect posture renders the return of blood more difficult. When a tight waist still further interferes with the circulation trouble is likely to result.

DR. ESTHER HAWKS believed that the question of dress was a matter of education. We should keep on with the children and continue their style of dress into later life. The expense of the new style garments is an objection, but it can be avoided with success by directing that buttons be sewed on the corset cover and the skirts hung from that.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 11, 1888.

THE PRESIDENT, THOMAS C. SMITH, M.D.,
IN THE CHAIR.

DR. J. F. HARTIGAN reported

A SUCCESSFUL CASE OF DOUBLE LAPAROTOMY FOR SUPPURATIVE PERITONITIS; AND ON THE USE OF ARSENIC IN SEPTICÆMIA.

(See page 513.)

DR. J. FORD THOMPSON: This paper brings up a very interesting subject. Sometime ago he reported a case of typhlitis in which he made an artificial anus and subsequently closed it and the patient recovered. Since then he has operated three times for typhlitis and peri-typhlitis. He had a few remarks to make about Dr. Hartigan's case which in some respects is very remarkable. In reality there was nothing in the case except the opening of three abscesses. The disease began as a peri-typhlitis and was followed by pyæmia, parotitis and, finally, two abscesses in the abdomen. It was a very clear history of blood-poisoning but it has been reported as a case of laparotomy. It is remarkable that the child should have had a peritonitis on one side of the abdomen and sometime after present as a peritoneal abscess on the opposite side. There is no other explanation for this except that both were due to septicæmia. Both were circumscribed collections of pus and were not general suppurative peritonitis. The peritoneum is liable to be attacked in septicæmia. Dr. H. only washed out the abscess cavity and did not see the intestines.

DR. HARTIGAN said he objected to the term abscess as the pus was in the abdominal cavity and if Dr. T. has listened to the paper he would have learned that he performed a laparotomy, which meant exposure of the intestines.

DR. THOMPSON said he thought he had listened very attentively and that Dr. Hartigan did not say that the intestines were either seen or examined, and that when a surgeon examines the intestines he says so. But even if the intestines in this case were both seen and felt, he would still claim it as a peritonitis which was circumscribed. Dr. Hartigan seemed to hesitate about opening the abscess but he did not know why for every surgeon opens collections of pus as soon as he discovers them. The question of typhlitis is very important. He would refer to a recent case of his in which there was perforation and death. In two cases just before this he only made a small opening and both recovered. In the third he did the same thing and the patient died in a few days. A systematic examination of the parts involved is the thing to do and not be content to evacuate the pus. The autopsy revealed a perforation of the appendix.

In cases of typhlitis the proper course to pursue is to open the abdominal cavity and inspect the parts involved. The worst practice in surgery is to wait for fluctuation. Pus is usually present by the fourth

or fifth day of the disease when the incision should be made; the cæcum and appendix should be examined—and if the latter is ulcerated it should be removed and the intestines sewed—and the abscess cavity washed. Sometime ago Dr. Busey asked him if there had been any reports where typhoid fever ulcers of the intestines had been sewed. At that time he knew of no cases. He would now state that Morton recently reported three cases operated on in which all died. The general impression of those present at the discussion was that the operation was scarcely justifiable in a subject who was already reduced to an extreme degree of debility by the primary disease. Greg Smith reports six cases of laparotomy for suppurative peritonitis, and all recovered. Smith contends that not only should laparotomy be performed for suppurative peritonitis, but all intestinal adhesions should be broken up before the abdomen is closed. For this purpose he uses a fountain syringe (to which the small nozzle is attached) and carries it into the cavity and the stream breaks up the fine adhesions.

DR. BUSEY said that it was possible that he may have misunderstood Dr. Thompson in saying that all cases of typhlitis and peri-typhlitis should be operated on on the fifth or sixth day or later.

DR. THOMPSON: "No earlier."

DR. BUSEY: Then I am to infer that we must cut in order to look for pus, or that these diseases always terminate in the formation of pus? If so, I take issue with Dr. Thompson. A large number of such cases will get well without suppuration. It is not always easy to make a diagnosis of the presence of pus, but there are other symptoms to aid us in making the diagnosis. Where there is reasonable suspicion of pus we should operate. In Dr. Hartigan's case there were symptoms of typhlitis and peri-typhlitis followed by collapse which did not last longer than a few hours; some weeks afterwards pus was discovered in the left iliac fossa, and laparotomy was performed; several weeks later a second collection of pus was detected in the abdominal cavity on the right side, and a second laparotomy was performed. Was the collapse the result of the bursting of pus into the abdominal cavity? But the collapse occurred some weeks before pus was discovered in the abdomen.

DR. HARTIGAN: The collapse occurred in the third week of the disease; in the seventh week there was suppuration of the parotid glands, three or four weeks later pus was discovered on the left side; and about the twelfth week pus was discovered on the right side.

DR. BUSEY: Then it is still more remarkable that in the tenth week suppurative peritonitis should have occurred without any inflammatory symptoms. He gave the details of a case that was not so promptly treated, and the result was death. He had seen the case in consultation on the 9th inst. The lady, 20 years old, three weeks previously had attended a party and eaten freely of such articles as are usually served at parties. The same night she was seized with acute pain, vomiting and tenderness over the abdomen. The diagnosis of typhlitis was made the

next day by the attending physician and the case was treated as such cases usually are. On the 8th she was seized with a darting pain which radiated from the right iliac region. On the 9th, when he saw her, her condition was about as follows: Neither tenderness nor pain; there was absolute ease and comfort; the temperature was 100°; respiration 36; pulse could not be counted. Her intellect was bright and she was cheerful and remarked that she was "getting well fast." The skin was drenched with sweat and very clammy. Her knees and feet were cold. He expressed the opinion that she was then dying, but if not an operation was imperative. There was no doubt in his mind that general peritonitis or a ruptured abscess had existed from the evening of the 8th when she felt the acute radiating pain extending over abdomen—most intense between ensiform cartilage and umbilicus. Opiates were freely used, which was followed by absolute comfort. This would have been a case for operation at the time of rupture or as soon after as possible. This patient died. This was undoubtedly a case where the evacuation of the pus was delayed too long.

He would call attention to a chain of symptoms connected with the condition of death and would ask whether the surgeon was justifiable in operating when he believed the patient was dying, or might die on the operating table or very soon after leaving it. Can we determine when death has begun, and if so can anything be done to avert it? He had seen a similar picture in a case of suppurative peritonitis several years ago and later another of rupture of the gall-bladder. When the process of death begins remedies are of no value because they will not be absorbed. In cases similar to the one observed is it the surgeon's imperative duty to operate even if death has begun? In many cases the operation is delayed too long. The difficulties are in making the diagnosis. Do not wait too long for pus. But cases are often cured without operations. He was glad that Dr. Hartigan's case terminated so favorably.

DR. THOMPSON: If there has been any advancement in surgical procedure it is in operating early. If one waits for fluctuation there is no question about the proper treatment. In typhlitis and peri-typhlitis we should operate early. In Dr. Hartigan's case there were symptoms of peri-typhlitis in the first week and then collapse that Dr. Hartigan explains by the rupture of an abscess. The early operation is the recognized surgical procedure of to-day. Operations for fluctuation is not an early operation for there is no doubt about what to do. The surgeon evacuates pus whenever and wherever he finds it. In typhlitis and peri-typhlitis there is usually a circumscribed swelling and there is pus on the fifth day. When there is any doubt aspirate. Morton would not use the needle but would proceed at once to perform laparotomy. If he found the vermiform appendix ulcerated he would cut it out and sew up the wound. The case should be operated on before the detection of pus by fluctuation. Pus may be detected by general symptoms if not by local.

DR. BUSEY wished to combat the idea that every case of typhlitis or peri-typhlitis should be operated

on. He does not oppose an operation when it is necessary. It may be advisable to operate before fluctuation but certainly not in every case. When there is a liability to suppurate and there is an increasing intensity of the symptoms, whether fluctuation is detected or not, there is a strong possibility of pus.

DR. THOMPSON: The operation should be performed on the fifth or sixth day, and it is frequently demanded before there are any well-marked symptoms.

DR. HAMILTON: In inflammation there is during the first stage an exudation. We may anticipate the suppuration by evacuating the exudate. In cellulitis of the leg there is an exudate, and if free incisions are made we can prevent pus-formation. This is the philosophy of Dr. Thompson's statement.

DR. HARTIGAN: If Dr. Thompson had followed me he would not have confounded his figurative case with mine.

Stated Meeting, January 25, 1888.

VICE-PRESIDENT, SWAN M. BURNETT, M.D.,
IN THE CHAIR.

DR. R. T. EDDES read a paper upon and presented a specimen of

LARGE CELLED SARCOMA OF THE LUMBAR VERTEBRÆ.

Attacks of supposed sciatica for some years. Paraplegia dolorosa. Extreme pain on movement. Curvature at level of last dorsal and first lumbar vertebræ. Tumor in the back. Vomiting. Death. Dilatation of the stomach. Destruction of the bodies of the second and third lumbar vertebræ by a giant-celled sarcoma which also formed a large tumor on each side of the vertebral column.

A married woman, 35 years old, had a difficult labor with her only child, now 7 years old. Soon after she had a tender spot in her back. Four or five years ago she had some attacks of sciatica, lasting a few days, which early in 1886 began to be more severe and continuous. In May she went to New York to consult a physician, but when she arrived the pain disappeared, so that she went shopping and to the theatre instead. The pain soon returned, however, attended with numbness and uncertainty of gait.

In September, 1886, she entered the Homeopathic Hospital in Boston. Late in that year her husband was informed of a curvature of the spine which, however, the physicians said they had been aware of since September, but as it was not painful and was only slight, it was supposed to be congenital or due to an old caries. A fulness in the side was noted at the same time.

During a part of the time she was in the hospital she was able to walk about and ride out, but in November she had to get up very carefully. On December 9 she was moved from one bed to another and then became almost completely paralyzed, and soon after completely so in the lower limbs. There was, however, soon some improvement in the movements of the limbs. From this time she had her alterna-

tions of improvement and the reverse, but with the balance on the wrong side. In June last the swelling in the left back below the rib was punctured, but only a few drops of pus obtained. Attempts were made to fix the spine by apparatus, but it could not be borne.

When first seen by me, in October, she had been in bed nearly a year. She was greatly emaciated, but no more anæmic than would be expected from her condition, and there was nothing to indicate the so-called cancerous cachexia. Her lower limbs lay almost motionless, supported and protected with the greatest care. There was a little movement of the toes and feet possible. There was great pain about the hips and running down the legs, which was greatly aggravated by the slightest movement and often by the slightest pressure, or even contact. The sciatic, and sometimes the anterior crural nerve on the right side, were painful on pressure, and at times the whole surface seemed hyperæsthetic. Movements of the arms perfect but often painful. There was a bed sore over the sacrum, and to dress this and change the bedding she was several times etherized and raised, this procedure being followed by extreme pain lasting for hours.

The functions of the bladder and rectum were sluggish, but there was no loss of control. Appetite and digestion fair, but considerable trouble from constipation and flatulence.

The urine at times contained a large amount of phosphate and carbonate of lime, with mucus and no pus. Once an excess of indican was noted. There was at no time any fever.

For several weeks she improved considerably and got a very good appetite, with less constant pain down the legs and less tenderness. She used a little morphine, on one or two nights none at all, and some codeia.

On the night of December 20 she took antipyrin for the relief of pain, which gave her a good night and no nausea. During the forenoon of the next day she began to vomit a greenish and brownish fluid which after more than twenty-four hours became stercoraceous in smell. I found the bacteria of putrefaction therein. The abdomen became tense and tympanitic at the upper part, the vomiting was relieved by nothing but morphine, and she died while partly under its influence.

The autopsy showed the stomach to be greatly dilated, sagging down nearly to the pubis, half filled with a brownish fluid and much gas.

There was nothing remarkable about the appearance of the liver, spleen or intestines. The ureters passed over the surface of the tumors soon to be described, but they were nowhere either strictured or dilated. In the right kidney was a little turbid fluid, one stone as large as a small chestnut and a good many smaller ones; otherwise both were healthy.

The specimen before us consists of the last dorsal and what remains of the three upper lumbar vertebræ, sawn longitudinally. The left side is preserved whole, with the exception of a little dissection to show the extent of damage done to the bone. The right side has been macerated and cleaned.

On both sides we have the last dorsal vertebra intact.

The first lumbar is little affected on the right side except two little spots of erosion of the body. On the left the transverse and articulating processes have disappeared and are replaced by this soft reddish mass. The second lumbar has almost entirely disappeared, nothing remaining but a thin, gritty lamella between two fibro-cartilages which are displaced but not destroyed, and a little piece of the end of the spinous process connected with the supra-spinous ligament.

The third lumbar is represented as to its body by this reddish pulp between two fibro-cartilages, and by the whole spinous process and some fragments of the articulating processes on each side.

In the macerated specimen the two vertebrae are the first and fourth, the other two being represented only by a few fragments.

A new growth occupies the angles formed by the sliding back of the first vertebra, and similar growths between and eroding the arches encroach on the spinal canal. The narrowest point is just below the termination of the spinal cord, so that it was not pressed upon, and there was enough room left to permit the passage of the cauda equina, which appeared to the naked eye normal. On each side and closely connected with the bone is a large rounded tumor, as large as one fist on the right side, and two fists on the left. It is this latter which pressed through below the rib and was felt during life. Upon its posterior surface is a mass of inspissated blood; in its outer margin are calcified patches. The central portion of the growth seems to be situated beneath the periosteum.

There were no secondary growths found and no enlargement of the glands. By inadvertence the liver was not incised.

The structure of the new growth is that of a giant-celled sarcoma.

In the *Boston Med. and Surg. Journal* I published several cases of malignant disease of the vertebrae with painful paraplegia, of which I will here refer to only one, which was that of a man of 55 with many symptoms like those in the case just described: great pain on turning in bed, pain in the legs, inability to walk, with no distinct paraplegia, but general loss of strength in the lower limbs.

The growth was here also connected with the body of the second lumbar vertebra, implicating to some extent the first and third, though the tumors outside were much smaller than in the case before us. It was a round-celled sarcoma with giant cells.

In the other cases the disease was more extensive.

After malignant disease has invaded the vertebrae, usually the lumbar, the symptoms are about the same whether it be a sarcoma or a carcinoma, and the cases just described may be considered fairly typical.

In another point, however, they differ; in that the sarcoma is primarily a bone disease, while the carcinoma is usually and, so far as I know, always, secondary to a similar growth elsewhere. In a large number of reported cases the starting-point has been the mammary gland. A case which seems to be an ex-

ception to the first part of this rule was reported by Dr. Kempe, where a lady had had a cancer of the breast removed by a member of this Society (Dr. Garnett), and afterward died after symptoms similar to those already described. The secondary growth in this case was pronounced alveolar sarcoma.

The diagnosis of this affection is likely to be obscure, especially in its early stages. When a cancer is known to be present elsewhere, the existence of severe and persistent pain in the nerves of the lumbar or sacral flexures, or both, is a very suspicious circumstance.

When there is no primary cancer, the diagnosis between this disease and caries may be for a long time in doubt, and the existence of curvature, and even of a tumor, does not at once clear it up. A large flattened tumor without tendency to pointing would, as in this case, be in favor of a neoplasm. Setting aside these, which may almost be called accidental aids in the diagnosis, I think that the extreme and continued pain on turning over or sitting up in bed, while at the same time no fever is present, is somewhat characteristic, as distinguishing it on the one hand from caries and on the other from any simulated spinal disease. In some cases it may be possible to investigate more closely the condition of motion, reflexes, and so on, or to palpate more deeply the abdomen, which in this case would have undoubtedly disclosed the presence of the tumors in the cavity.

The explanation of the sciatic and crural pains in the pressure exercised on the nerves, both within and without the spinal canal, is too obvious to need more than mention, but it should not be forgotten that an actual myelitis may result from the pressure, as in one of the cases reported by me. This is not, however, one of the most usual results, probably for the reason that, as the lumbar vertebrae are the place of election of the new growths, the narrowing takes place below the cord. In other cases, even when the bones of the dorsal vertebrae are extensively diseased, the softening proceeds with comparatively little encroachment on the calibre of the spinal canal.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Chloral in Diphtheria—Carbolic Cauterization in Diphtheria—Antiseptic Properties of Carbolic Acid—Sodic Salts in Gynecological Practice—Congress for the Study of Tuberculosis.

Various remedies have been employed in the treatment of diphtheria, but the cures are not in proportion to the remedies vaunted. Dr. Mercier in a paper read by him at a recent meeting of the Société de Thérapeutique reported that he had obtained very excellent results from the use of chloral in this affection. Before giving chloral Dr. Mercier generally administers an emetic, preferably the powder of ipecacuanha. He then gives from 9 to

30 centig. of chloral, in the form of a syrup, every half hour, care being taken to give food and drink before hand, so as to leave the syrup in contact with the throat. Moreover, the administration of liquids before the chloral prevents the latter from giving rise to gastric pains. The drug generally stopped the further progress of the disease, and within forty-eight hours the false membranes disappeared and then an astringent gargle was prescribed. The treatment is, however, only of use in the early stages of the disease, and is without benefit when the larynx has become involved.

At a recent meeting of the Société Médicale des Hôpitaux, Dr. Gauchier read a paper on the treatment of diphtheria by removing the false membranes and cauterizing the throat with a concentrated solution of carbolic acid. He dissolves from 5 to 10 grams of carbolic acid in 10 grams of alcohol, and adds to this solution from 15 to 20 grams of camphor and a small quantity of oil, from which Dr. Gauchier had obtained excellent results in two cases. Dr. Jaffroy stated that he employed chloral as a local application for diphtheria, and preferred it to carbolic acid as it possessed more powerful anti-parasitic properties than the latter. He washes the throat with a 2 per cent. solution of chloral, and then applies a one-fifth solution to the false membranes which soon disappear. The throat remains ulcerated, and the application of the solution is continued. By this means diphtheritic angina is transformed into erythematous angina. He found, however, that this treatment could not be applied to children. Dr. Blachez believes that false membranes may be destroyed in a less painful manner with paraffine oil. In many cases the false membranes continue to develop in the larynx after they have been removed from the throat. Dr. Gauchier remarked that the special object of his treatment was to destroy the false membranes in order to prevent secondary infection. Dr. Richard stated that the addition of one-half per cent. of tartaric acid rendered carbolic acid much more antiseptic.

Tartaric acid seems to possess marked antiseptic properties, or at any rate it increases this property when combined with other antiseptics. In a note on the antiseptic value of dressings with corrosive sublimate Dr. Laplace stated that when this salt comes in contact with an albuminous substance, the sublimate is precipitated as an insoluble albuminate of mercury. This takes place at the surface of wounds when sublimated dressings are employed, and the value of the dressing is largely affected thereby. Dr. Laplace suggests the employment of tartaric acid to prevent this formation of insoluble salts. The following are the formulæ he employs: 1. For washing and irrigating wounds, perchloride of mercury, 1 gram, tartaric acid 5 grams, distilled water, 1,000 grams. 2. In solutions for preparing antiseptic compresses the proportion of tartaric acid should be 20 grams.

In the course of some researches in connection with verifying Dr. Luton's statements concerning the curative action of sodic salts in cholera, Dr. Chéron, the well-known gynecologist and physician to

the St. Lazarus (Female) Hospital, discovered that the salts were also very beneficial in gynecological practice. In a note published by Dr. Chéron, he stated that a patient in the above hospital was suffering for two months from severe metrorrhagia, depending upon chronic endometritis with pelvic peritonitis. He employed the following solution in the form of hypodermic injections: Crystallized phosphate of soda, sulphate of soda α 6 grams, distilled water 120 grams. From 4 to 6 grams of this solution to be injected into the buttock or thigh once a week. The solution must be prepared on each occasion. It must also be carefully filtered, and only distilled water used, as ordinary water may cause supuration at the seat of the injection. The injections must be made slowly, and followed by a thorough kneading of the part for several minutes. By this treatment the uterine hæmorrhage became markedly decreased on the next day after the very first injection, and after six injections the woman was completely cured, the discharge having entirely disappeared. Encouraged by such satisfactory results, Dr. Chéron resorted to the same treatment in eight other cases of pelvic peritonitis, and in four of uterine hæmorrhage caused by chronic endometritis. In every one of the cases rapid and permanent cure was obtained. Dr. Chéron does not pretend to explain the *rationalité* of the method, but believes that the introduction of alkalies into the circulation increases the systemic metabolism, since Liebig has experimentally shown that an increase in the amount of free alkalies in the blood accelerates the oxidation process.

A congress composed of physicians and veterinary surgeons, for the purpose of the scientific study of tuberculosis in human beings and in animals, will be held in the Ecole de Médecine, Paris, from the 25th to the 31st of July, 1888. The following questions will be discussed: 1. The dangers resulting from the use of the flesh and milk of tuberculous animals. 2. The special aptitudes of certain human races and animal species for contracting tuberculosis. 3. The manner in which the tuberculosis virus is introduced and propagated in the system, and the prophylactic measures to be adopted. 4. The premature diagnosis of tuberculosis in human beings and animals. Besides the above questions, the congress will give special attention to the following: The hereditary character of tuberculosis in human beings and animals, its transmission from one human being to another, or from an animal to a human being. The different manners in which experimental tuberculosis is developed, according to the quality and quantity of virus inoculated. The different characteristics of tuberculosis in different animal species. The means of distinguishing lesions produced by Koch's bacillus from the granulations and inflammation due to different microbes (zooglyca, bacteria of contagious pneumonia in pigs, aspergilli, etc.), to animal parasites or foreign substances. Tuberculous lesions accompanied by other microbial lesions. The manner in which giant-cells and tuberculous islets are formed. The evolution of local tuberculosis. The destructive agents of Koch's bacillus. Local and general methods of checking the

spread of experimental tuberculosis. The action of surgical therapeutics in tuberculous affections. Medical men of all nationalities will be admitted to the congress. All communications concerning the congress should be addressed to Dr. Petit, General Secretary, 11 Rue Monge, Paris. Subscriptions to be sent to M. G. Masson, Treasurer, 120 Boulevard St. Germain, Paris.

A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Diagnosis and Surgery of Cerebral Tumors—Therapeutics of the Upper Air-passages, and the Use of Patent Nostrums and Proprietary Medicines—Complete Aphonia—Saccharinate of Cocaine.

In summing, before the Academy of Medicine, up the results of the operation for cerebral tumor performed by Dr. Weir on November 17 (the operation is more particularly mentioned in the editorial article on "Surgery of Cerebral Tumors," p. 525), Dr. Seguin said that the man's life had been unquestionably prolonged by it, and that his general condition went to show that there had been as yet, apparently, no new growth of the sarcoma. He thought that when the patient had completely recovered from the effects of the attack of malarial fever many of the symptoms would show considerable improvement as compared with the present.

He then rehearsed the symptoms indicating whether a tumor was probably situated in the cerebrum or not, and gave the bases upon which a diagnosis of the topographical location of cerebral tumors is arrived at. Having called attention to the importance of the distinction made by Brown-Séquard more than thirty years ago between irritative and destructive lesions, as indicated by the symptoms, he stated that spasms resulting from cerebral tumors often involved at first but a very small area, although the attacks were liable afterwards to extend to typical epileptiform convulsions. It was therefore of great assistance to secure, if possible, an exact account of the first spasm, which might properly be called the signal symptom. In the next place, it was desirable to ascertain whether the tumor was cortical or sub-cortical. This was often extremely difficult, and little light was thrown upon the matter by the authorities. Deductions could be drawn sometimes, however, from the nature and location of the signal symptom, and the presence or absence of localized headache. As to the evidence afforded by local temperatures, not much reliance could as yet be placed upon this. Whether an operation was advisable in any given case would depend largely on whether there were more than one, as indicated by the symptoms. The presence of dysphagia would go to show that there was a lesion of the medulla oblongata in addition. In any case where there were indications of tubercle or cancer in other parts of the body it was undesirable to operate.

Dr. W. W. Keen, of Philadelphia, who, like Dr. Godfrey, of Bridgeport, was present on this occasion by special invitation, gave an account of a successful case of his own (referred to by Dr. Weir), which has as yet not been published in full. The patient, who was 26 years of age, fell from a window when 3 years old, his head striking on a brick. A superficial wound was made, but no trouble was experienced from the injury until he was 23, when epilepsy developed. This was associated with aphasia and paralysis of the right arm and leg. No history could be obtained, however, of any signal symptom, such as Dr. Seguin had spoken of. Later there was complete recovery from the paralysis and aphasia. The operation was performed December 15, 1887. Instead of marking upon the skull with a colored pencil the spot where the opening was to be made, as had been done by Dr. Weir, he gouged out a little piece of bone at a point corresponding with a slight scar which was presumably left by the injury to the head received when the patient was 3 years old. The tumor removed measured nearly three inches in its long axis. During the operation great trouble was experienced from hemorrhage, due in part to the extreme friability of the vessels. Hemorrhage was controlled partly by hot-water, partly by ligation, and partly by pressure. In tying a vessel it was found that if one end of the catgut was pulled at all more strongly than the other the ligature would invariably cut through; so that absolute equality of traction was required in order to accomplish this successfully. The hot-water employed was of a temperature of from 120 to 130 degrees. Dr. Keen said that he regretted that previous to the operation he had not administered a dose of morphia, as recommended by Horsely, for the purpose of diminishing the supply of blood to the parts. In another case he would also be inclined to give ergot and perhaps antipyrin, and he preferred to use cocaine locally if operation required. Such agents he thought afforded a much better chance of controlling hemorrhage in this class of cases than the mechanical means commonly resorted to. During the operation he did not use the spray, but made use of all the other ordinary antiseptic precautions.

The patient did perfectly well for the first few hours after the operation. On the third day marked symptoms of pressure showed themselves, and this was ascertained to be due to the presence of a large clot, of greater size than the tumor had been. This was removed by careful washing, and all went well for ten days, when pressure symptoms were again observed. There was also severe diarrhoea, and a temperature of 104½ degrees. Under the circumstances the presence of pus was suspected, and the wound was accordingly reopened. Afterwards Dr. Keen regretted having done this, as it resulted in hernia cerebri, and he became convinced that the unfavorable symptoms noted were largely due to the diarrhoea. Later the patient had two or three other attacks of diarrhoea (less severe than the first), which were also accompanied with more or less rise in temperature. The hernia remained for a considerable time, and in order to facilitate the process of healing skin-grafts were taken from the arm. The wound

was drained by bichloride gauze for eight weeks, but there was no evidence of its producing any toxic effect upon the system; the diarrhoea in Dr. Keen's opinion not being attributable to this cause. While the healing was going on the surface remained considerably elevated, but when the cicatrizing process had been completed it suddenly became concave, instead of convex, and had so continued ever since. Photographs were exhibited of the hernia cerebri and of the wound when healed.

In conclusion, he spoke of the importance of completely shaving the head, for purposes of examination, of every patient in whose case there was any brain-trouble likely to call for operation, and said that in a case of epilepsy which had recently been referred to him two scars were discovered when the scalp had been shaved.

At the meeting of the Section on Laryngology and Rhinology of the Academy of Medicine, in March, a discussion was announced on "Therapeutics Applied to the Upper Air-Passages, with special reference to the use of Patent Nostrums and Proprietary Medicines by the Laity and Profession." It was to be led off by a paper by Dr. F. A. Castle, on "Facts and Fallacies in the Use of Nostrums;" but, owing to the fact that Dr. Castle, much to the disappointment of the members of the Section, contented himself with mere general observations on patent and proprietary medicines, with scarcely a reference to the special preparations employed in diseases of the nose, throat and chest, the discussion took a different turn from that contemplated, and was confined to the legitimate means and methods employed by the regular profession in diseases of the upper air-passages, the ground gone over being for the most part much the same as in the discussion before the Academy last year on the modern treatment of these affections, when Dr. Bosworth read the principal paper of the evening.

In the course of his paper Dr. Castle very truly remarked that so far as the relations of the profession to patent nostrums and proprietary medicines was concerned, the less regular physicians had to do with remedies about which they knew nothing, the better would it be for themselves and patients. So far as the laity was concerned, any repressing power that the profession might once have possessed was now entirely gone. One trouble was that when there were but few nostrums their use had been too much encouraged by certain members of the regular profession, and at the present time the public were apt to believe that physicians were prompted by a feeling of jealousy in condemning such remedies; so that there must be some good in them or they would not be so ready to disparage them.

The Chairman of the Section, Dr. O. B. Douglas, presented a case of complete aphonia, in which the diagnosis was involved in considerable obscurity. The patient was a young woman of seventeen, apparently in robust health, and in whom no local condition could be found to account for the loss of voice. About a year ago she had an attack of diphtheria, and previous to this there was at one time some enlargement of the thyroid gland.

During the last four months there had been gradually increasing aphonia, and this was now complete. On making an examination of the patient Dr. Douglas found that the tonsils were enlarged, that there was a hypertrophied condition of the inferior turbinated bodies. He had removed the tonsils, without any effect upon the aphonia, but had not as yet operated upon the hypertrophied ends of the turbinated bones.

Dr. W. B. Jarvis thought that the case was perhaps one of functional or hysterical aphonia. He said he had met with three or four such patients, and that in this class of cases the prognosis was always good, as, in order to effect a cure, it was only necessary to produce a suitable psychological impression upon the patient.

Dr. Beverley Robinson said that personally he should be somewhat loath to class what seemed to him paralysis following diphtheria, as a functional affection. He had occasionally met with more or less aphonia, or rather dysphonia, as a result of diphtheria. It was, however, usually associated with some difficulty of deglutition, which, according to Dr. Douglas' account, was not present in this instance. The aphonia here he believed to be due to an impaired state of the nerves supplying the vocal apparatus, although we might not be able to distinguish the exact condition present. In such cases a long course of treatment with electricity and other agents was sometimes required.

Dr. Castle said that possibly some light might be thrown on this case by a paper published by Dr. Echeverria, about twelve years ago, in the *New York Medical Journal*, and also by one that had appeared later in the "Transactions of the American Gynecological Society," in which similar conditions were recorded as being due to reflex paralysis, and as being relieved by making a decided impression upon the mind or by local treatment directed to the ovaries or other organs.

Dr. Andrew H. Smith then presented a specimen of a new preparation of cocaine, which he had found of service for local use in the throat. This was the *saccharinate of cocaine*, in which the sweetness of the saccharin disguised the disagreeable taste of the cocaine; which made it especially applicable in the case of children. He said it was 25 per cent. less strong than the hydrochlorate of cocaine, and a 5 per cent. solution of it would, therefore, be equal in strength to a 4 per cent. solution of the latter.

P. B. P.

NECROLOGY.

CORNELIUS REA AGNEW.

After the publication of the editorial page containing the notice of the illness of Dr. Agnew the afternoon papers of last Wednesday announced his death on that day at 2.45 P.M. He was in good health until a little more than a week before his death. On Monday, April 9, he was in consultation in the case of the late Mr. Conkling, and at that time was not feeling well. When he returned to his

house he grew rapidly worse, was obliged to take his bed, and never again left his house. It was soon found that perityphlitis had set in, and on consultation between Drs. Delafield, Thomas, Sands, and McBurney, it was decided to perform laparotomy, which was done on Friday, April 13, and resulted in the evacuation of a collection of pus about the cæcum. Dr. Agnew rallied well from the operation, and showed marked improvement for two days, but there was a return of the unfavorable symptoms, and at his own suggestion a consultation was held with a view to a second operation he began to improve, having a good day until April 16, at 1 p.m., when there was a change for the worse, and gradual sinking from that time. He was conscious until a few moments before the last, and then apparently fell into a restful sleep, from which he did not awake. He was extremely courageous throughout his illness, and was fully prepared for the result. His funeral took place from the Fifth Avenue Presbyterian Church last Saturday. While Dr. Agnew leaves no unfinished work on hand it is said that he had collected a large quantity of material which he intended to make use of when he should be prevented by age from much active work.

Dr. Agnew was born in New York City on August 8, 1830, and was therefore in the 58th year of his age. He was graduated from Columbia College in 1849, and soon began the study of medicine under Dr. J. Kearney Rogers, the then professor of anatomy in the College of Physicians and Surgeons. Dr. Agnew was graduated in 1852 from the College of Physicians and Surgeons, and entered the New York Hospital the following year on the surgical staff, having been appointed junior and then senior walker to the hospital while he was a student. In 1854 he went to the Lake Superior region, to a small mining settlement on Portage Lake, where now stands the town of Houghton, Mich., and practiced there for a year. He then received the unsolicited appointment of surgeon to the Eye and Ear Infirmary of New York, returned to the East, and went to Europe for special study in order to fulfill the conditions of the appointment. Going first to Dublin, he became a resident pupil of the Lying-in Asylum, and attended the eye and ear clinics of Mr., afterwards Sir William Wilde. From Dublin he went to London, to be with Bowmann and Critchell, and here he attended the lectures of Ferguson. He then went to Paris to study under Velpeau and Ricord, in the eye and ear clinics of Sichel and Desmarres, and the skin clinic of Hardy. He returned to New York in 1855 and entered upon general practice, continuing in his position as surgeon to New York Eye and Ear Infirmary until 1864, when his duties upon the U. S. Sanitary Commission compelled him to resign. In 1858 Governor E. D. Morgan appointed him Surgeon-General of the State of New York. At the outbreak of the Civil War the Governor appointed him Medical Director of the State Volunteer Hospital of New York. For some time after this he had charge of the trust of obtaining the medical supplies for the regiments passing through New York to the seat of war.

The work that made his name known throughout the country was his connection with the U. S. Sanitary Commission. When the Commission was organized Drs. Elisha Harris and C. R. Agnew were unanimously elected as members fulfilling special requirements, and it was in great measure to the labors of Dr. Agnew that the success of the Commission is to be attributed, as Charles J. Stillé testifies in the "History of the U. S. Sanitary Commission."

With Drs. Wolcott Gibbs and Wm. H. Van Buren, Dr. Agnew prepared for the quartermaster's department the plans that were subsequently carried out in the Judiciary Square Hospital in Washington, and these were more or less accurately followed in the pavilion system of the war.

Dr. Agnew was one of the four founders of the Union League Club of New York, an organization that rendered such signal service to the Government during the war, and he was for many years one of its Vice-Presidents.

After the close of the war he began to limit his practice to the specialty in which he has achieved such an enviable reputation during the past twenty years. In 1866 he established, at the request of the Faculty, an eye and ear clinic in the College of Physicians and Surgeons, and in 1869 was elected Clinical Professor of diseases of the eye and ear, a position that he retained until his death. In 1868 he was instrumental in establishing the Brooklyn Eye and Ear Hospital, and in 1869 the Manhattan Eye and Ear Hospital in New York.

For more than twenty-five years Dr. Agnew has been prominent in educational matters. In 1859 he was elected one of the trustees of the public schools of New York City, and was afterwards made president of the board. In 1864 he was one of the associate trustees chosen to organize the School of Mines of Columbia, which has since become so famous. He was one of the oldest members of the Board of Trustees of Columbia College. For a long time he has been an advocate of higher medical education, and among other things of better preliminary education of students entering the medical profession. He was also prominent in public health matters, having been secretary of the first Society organized in New York for sanitary reform, and a member of the committee that prepared the first draft of the city health laws.

Dr. Agnew was a most amiable man, and while he was modest and retiring in disposition, he had specially attractive social qualities. To students he was always a friend, and even the wayward student found in him more of the wise counsellor and warm friend than severe critic. His self-sacrificing spirit during the dark days of the civil war should endear his memory to all the citizens of the Union, as his gentle and lovable disposition, his learning, his noble nature, and his high attainments have made his memory dear to and will make his loss severely felt by the whole medical profession.

He leaves a widow, one son, and seven daughters.

BOOK REVIEWS.

GUIDE TO THE HEALTH RESORTS IN AUSTRALIA, TASMANIA AND NEW ZEALAND. Edited and compiled by LUDWIG BRUCK, Medical Publisher. 8vo, p. v-183. Sydney: "The Australasian Medical Gazette" Office. 1888. London: Bailière, Tindall & Cox.

In this book may be found concise descriptions of more than 200 health resorts, with analyses, temperature, and special indications of nearly 100 mineral waters throughout Australasia. In what may be called the key to the guide the health resorts named have been arranged in 28 classes and sub-classes, with remarks as to their characteristic nature; and at the same time the diseases are named that are benefitted by the different classes. The climatology of the work has been compiled from official documents, and contains an outline of the climates of Australia, Tasmania, and New Zealand. In compiling the book Mr. Bruck had the assistance of a large number of medical men, and there can be no doubt that the work is as accurate and complete as it is concise. Each resort is described as to location, scenery, amusements, postal and telegraph facilities, hospital, library and musical facilities, excursions, special indications, if any, season, physician, hotels, and the way of getting to it. The resorts are also classified according to their respective colonies, with remarks on the physical aspects of the various colonies.

In classifying the resorts according to their therapeutic indications, after mentioning all the various waters, from acidic to undetermined, making a list of 16, the author gives the seaside resorts, climatic health resorts, dividing these into 4 classes according to their location, under 1000 feet above sea-level up to 2500 feet above sea-level, health resorts at a high altitude, from 2656 to 4328 feet, winter stations, and possible grape cure and whey cure stations.

The book also contains an article on the New Zealand Thermal Springs districts by Hon. Sir W. Fox, K. C. M. G., which was published by the New Zealand Government in 1882.

With this book in his possession no physician need send a patient at random to Australia or Australasia.

OBSTETRIC SYNOPSIS. By JOHN S. STEWART, M.D., Demonstrator of Obstetrics, and Chief Assistant in the Gynecological Clinic of the Medico-Chirurgical College of Philadelphia. Sm. 8vo, pp. x-202. Illustrated. Philadelphia: F. A. Davis, 1888.

This is a volume of the "Physicians' and Students' Ready Reference Series." The introduction states that it "is specially designed to assist the undergraduate in acquiring a thorough knowledge of this department (Obstetrics?), being so systematically arranged that at a glance he may readily inform himself on any point pertaining to the study." The book contains an appendix in which is given the

report on "Uniformity in Obstetrical Nomenclature" as adopted by the Obstetric Section of the Ninth International Congress. The chief value of the work is to be found in this appendix.

ACCIDENTS AND EMERGENCIES. A Manual of the Treatment of Surgical and other Injuries in the Absence of a Physician. By CHAS. W. DULLES, M.D., Surgeon to the Out-door Department of the Hospital of the University of Pennsylvania, etc. Third edition, revised and enlarged, with new illustrations. 8vo, pp. viii-123. Philadelphia: P. Blakiston, Son & Co., 1888. Chicago: W. T. Keener.

The exhaustion of the first two editions of this excellent manual shows that there was a place for it, and that the place was filled. The suggestions given by the author are simple and practicable, and the layman that understands and carries them out may be of material service both to the physician on his arrival, and to the patient. It would be well if such a book could have a permanent and conspicuous place in every factory, machine shop, steamer, and railway train. It is a book for the layman, and should be where he can easily see it and learn something of its contents.

MISCELLANEOUS.

MEMORIAL CELEBRATION IN HONOR OF VON LANGENBECK.—Professor von Bergmann opened the Seventeenth Congress of German surgeons in the Aula of the University. The evening before, a memorial gathering in honor of the late Bernhard von Langenbeck had brought the members of the Congress and of the Berlin Medical Association together in the largest room of the Philharmonie. Langenbeck had been honorary president of both societies. The vast room was completely filled. The family of the great surgeon took part in the celebration; in the boxes were present the Grand Duke of Baden and many ladies. One end of the room was hung with black cloth and magnificent palms, in the midst of which was placed a full-length bust of Langenbeck. After some choral singing, Dr. v. Bergmann delivered the funeral oration, of which I will only give the part dealing with the deceased surgeon's relations with England. "His journey to England increased his inclination for surgery, and decided his career. In London at that time many illustrious surgeons were teaching who kept up the heritage of a glorious past. Scientific collections, never seen or heard of in Germany, were freely open to him; whilst the hospitals gave him occupation for the whole day. Astley Cooper especially attracted him. He had already given up lecturing; but his three nephews, first-rate surgeons, paid much attention to the young German surgeon. Here Langenbeck felt happy and at home. These men were not only distinguished practitioners of the healing art, but they were happy in the unselfish practice of their profession. The impression made on Langenbeck's mind by his visit to the College of Surgeons was deep and lasting. His influence has been of the greatest service in establishing intimate relations between English and German surgeons. When in 1881 he went for the last time to England, to take part in the International Congress of London, he had a most enthusiastic reception wherever he went.—*British Medical Journal*, April 14, 1888.

WASTED SUNBEAMS—UNUSED HOUSE-TOPS.—Dr. Gouverneur M. Smith says: Cannot architectural ingenuity, coached by sanitary science, contrive some method of using the thousands of acres of house-tops in New York so that roofs, now so useful in affording in-door protection from cold, sleet and rain, can be made additionally useful, at certain seasons, by affording out-

door recreation and protection from invalidism? Cannot the same skill contrive new designs for the upper and most salutary stories of our dwellings; playing rooms and sunning rooms, especially adapted for the winter season, but so cleverly fashioned that too intense torrid beams can be excluded in summer? The "solarium" of the New York Hospital, made attractive with its plants, birds, and aquaria, is a potent ally of therapeutics in restoring the convalescents, and at the Hospital for the Relief of the Ruptured and Crippled, the contagious sparkle of the sunbeam is found shining in the eyes and lives of the young patients. Physicians not infrequently have occasion to observe the arrangements and conditions of the upper floors in our first-class private dwellings; for if a servant is sick, the family physician may be summoned to attend. The conditions may not be absolutely pernicious, but the space on these precious stories might be utilized in a much more healthful and attractive way. The heated and vitiated air from the lower part of the house rises to the top floor, with perhaps slight provision for its exit, and here are found servants' and storage rooms and also often a dark closet with precipitous ladder, leading to the scuttle, rarely entered and ascended, except by workmen to repair the roof. Apartments for domestics have to be provided for, but quarters for trunks and unused articles rather than occupying choice space, could be centralized in the building, be lighted from above, or relegated to some special annex in the yard.—*Medical Record*, April 21, 1888.

THE MICHIGAN STATE MEDICAL SOCIETY will hold its twenty-third annual meeting in Detroit, Thursday and Friday, June 14th and 15th, 1888, beginning at 10 o'clock in the morning. Spacious halls for general session and Sectional work have been engaged in the new and elegant Cowie building, which is centrally located, easy of access, and opposite the Public Library. At the last annual meeting the following amendment to the Constitution was adopted:

"To establish three sections in order to facilitate professional and scientific work, viz.:

A Section on Medicine.

A Section on Surgery.

A Section on Midwifery and Gynecology.

These sections shall hold their meetings in the afternoon, and the Society shall meet in general session in the forenoon of each day."

Members desiring to read papers are requested to communicate with the Secretary of the Section in which he desires his paper to appear, sending him the title and abstract of the same not later than June 1st. This is necessary in order to group the papers appropriately and secure their proper discussion. The names of the Secretaries are as follows:

Practice of Medicine, H. B. Hemenway, Kalamazoo.

Surgery, F. W. Mann, 250 W. Fort St., Detroit.

Obstetrics and Gynecology, C. Henri Leonard, 18 John R. St., Detroit.

PHOTOGRAPHS OF THE EYE.—Professor Cohn and Dr. Claude du Bois-Reymond, at the 60th Naturforscherversammlung in Wiesbaden, showed photographs of the eye taken by the "lightning" illumination process (discovered by Herren J. Goedicke and A. Methe, Berlin, S. W., Ritterstrasse 74). The illumination is so sudden and fleeting that when it occurs in a chamber in previous absolute darkness the pupil has not time to contract, and thus the absolute dilatation can be represented on photographs. It is hoped that it will be possible to photograph the retina during life by this process.

MEDICAL WOMEN IN LONDON.—A Miss Macdonald, having completed the recognized course of a medical school, has been admitted by the Society of Apothecaries to examination for its diploma in medicine, surgery and midwifery.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS will hold its next annual meeting at Washington, D. C., September 18, 19, and 20, 1888. Secretary, R. W. Taylor, 40 West 21st St., New York.

THE AMERICAN SURGICAL ASSOCIATION will hold its next annual meeting in Washington, D. C., September 18, 19, and 20, 1888. J. K. West, M.D., Richmond, Ind., Secretary.

VON LANGENBECK'S LECTURES will be published as soon as possible, under the editorship of Professor Gluck.

WESTERN RESERVE UNIVERSITY will, beginning next Autumn, require attendance upon a three years' graded course.

NEW BOOKS RECEIVED.

"Ophthalmic Surgery," by Robert Brudenell Carter and William Adams Trast. Illustrated with a chromograph and 61 engravings. Philadelphia: Lea Bros. & Co.

"Journal and Proceedings of the Royal Society of New South Wales, December, 1887." Vol. xxi, Part III.

"Bruck's Guide to Health Resorts in Australia, Tasmania and New Zealand."

"A Manual of Diseases of the Nervous System," by W. R. Gowers, M.D., F.R.C.P. American edition, with 341 illustrations. Philadelphia: P. Blakiston, Son & Co.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM APRIL 14, 1888, TO APRIL 20, 1888.

Major Geo. M. Sternberg, Surgeon, having been instructed by the President to proceed to the Island of Cuba for the purpose of continuing his investigations of the methods of preventing the spread of epidemic diseases, will, in connection with his present duties, report to the Secretary of the Treasury for further instructions. S. O. 89, A. G. O., April 18, 1888.

Capt. Clarence Ewen, Asst. Surgeon, granted leave of absence for six months, with permission to go beyond sea. S. O. 85, A. G. O., April 13, 1888.

CHANGES OF STATION.

Capt. Wm. H. Arthur, Asst. Surgeon, ordered from Ft. Niagara, N. Y., to Ft. Bowie, Ariz., to take effect on the expiration of his present leave of absence.

First Lieut. Chas. S. Black, Asst. Surgeon, ordered from Ft. Davis, Tex., to Ft. Sidney, Neb. S. O. 86, A. G. O., April 14, 1888.

First Lieut. Wm. D. Crosby, Asst. Surgeon, ordered for duty at Jefferson Bks., Mo., after being relieved by Asst. Surgeon Wm. H. Arthur, and upon the expiration of the leave of absence granted him in S. O. 60, A. G. O., March 14, 1888. S. O. 86, A. G. O., April 14, 1888.

APPOINTMENT.

Ogden Rafferty, to be Asst. Surgeon, with rank of First Lieut., March 26, 1888.

PROMOTION.

Capt. Joseph B. Girard, Asst. Surgeon, to be Surgeon, with the rank of Major, March 22, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING APRIL 21, 1888.

Medical Inspector A. C. Rhoades, detached from special duty, New York, and waiting orders.

P. A. Surgeon L. G. Henneberger, detached from Naval Hospital, N. Y., and to special duty attending officers and families, New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING APRIL 21, 1888.

Surgeon W. H. H. Hutton, to proceed to Biloxi, Miss., on special duty. April 21, 1888.

Surgeon W. H. Long, granted leave of absence for fourteen days. April 21, 1888.

Surgeon H. W. Sawtelle, granted leave of absence for seven days. April 21, 1888.

P. A. Surgeon F. M. Urquhart, granted leave of absence for seven days. April 19, 1888. To assume temporary charge of Cape Charles Quarantine Station. April 17, 1888.

P. A. Surgeon J. H. White, relieved from quarantine duties at Sapelo Station. April 21, 1888.

P. A. Surgeon L. L. Williams, relieved from duty at Marine Hospital, Boston, Mass.; to assume charge of Cape Charles Quarantine Station. April 17, 1888.

P. A. Surgeon W. D. Bratton, relieved from duty at Marine Hospital, San Francisco, Cal.; detailed as medical officer, Pevenue Str. "Bear," during summer cruise. April 19, 1888.

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ORIGINAL ARTICLES.

NOTES ON A FEW CASES IN WHICH THE ELECTRO-STATIC REMEDY WAS USED.

*Read before the Medical Society of the District of Columbia,
February 1, 1888.*

BY IRVING C. ROSSE, M.D.,

OF WASHINGTON, D. C.

My apology for naming static electricity in connection with the desultory remarks about to follow, must be the fact that the use of Franklinism in neurological therapeutics is comparatively recent, and that the physicians of Washington have not given the subject the attention it merits. The simple reason for this neglect is that no one skilled in the use of the more perfected machines has yet brought the matter before this body in such a manner as to elicit discussion.

More than one medical man has said to me: "Oh, I don't believe in electricity, I have tried it and can get no results." Further conversation revealed the fact that these skeptics had, to say the least, but cloudy notions of the difference between a galvanic and a faradic battery; they had never heard of a differential calorimeter, and static electricity was to them a sealed book. My remarks may not accrue to the delectation or benefit of such a grade of development; for it is one not likely to make a correct interpretation of any medical fact, and it would be an insult to your intelligence to presume for a moment that any of you are so lacking in this regard, or that most of you are unfamiliar with the current literature of static electricity, more particularly as it has appeared in the journals for the last few years.

My attention was first directed to this subject while pursuing a neurological course under the tuition of Prof. William A. Hammond, when my friend Dr. W. J. Morton, of New York, kindly gave me the benefit of an experience that was subsequently extended at the Post-Graduate Medical School. Dr. Morton's admirable paper, read before the Academy of Medicine not long ago, is a great advance and development of the ideas of Franklin, and it did much to give vogue and therapeutical standing to this valuable agent. Since then numerous writers and experimenters have taken up static electricity. The style of machine—formerly so defective in construction as to bring this form of electricity into disrepute—has now been so far improved and perfected as to secure

the maximum of tension and quantity, and at the same time the machines are so little hygroscopic as to work in all conditions of the atmosphere. As I do not wish to occupy time and attention by further reference to details that are doubtless familiar to you, I shall confine myself to the brief mention of a few cases selected at random from a considerable number that I have treated; and if the comments thereon should appear rambling and disconnected, I must anticipate the criticism with the excuse that I have merely noted the thoughts that were uppermost and most engrossed my attention at the time the cases were under observation.

Those mentioned in the first group are recitals of failure. It may not be pleasant to record one's failures; but in the interest of truth and wisdom it must be done, since the interpretation of a negative is often more instructive than that of a positive result.

In September, 1885, there came under my notice a man of 38, who during five years had been treated for rheumatism, impaired eyesight, and general debility. The symptoms were first noticed in China, where his tabetic walk often subjected him to the imputation of being drunk, though perfectly sober. He complained of sharp darting pains, from the small of his back to the soles of his feet, in which were sharp tingling pains and a feeling as if the toes were too large for his shoes; of a sense of tightness around the waist; of dizziness; of trouble with his throat, and occasional spells of vomiting. The patient had a history of syphilis, and his alcoholic and nicotinic habits were bad.

There were no objective manifestations of rheumatism; but the patient was unable, on closing his eyes, to touch designated points of his body with the index finger, or to stand or walk without staggering, and the knee-jerk was absent. In brief, he showed the typical sensory, motor, and cerebroscopical signs of that form of dorsal tabes generally known as progressive locomotor ataxy.

Treatment availed but little in this case, and the patient went on from bad to worse.

The same may be said of a case of antero-lateral sclerosis which was left under my care in August, 1886, for a month, during the temporary absence of another physician. In this case the symptoms, both sensory and motor, were most apparent in the lower extremities, being manifested by exaggeration of the patellar tendon reflex, the presence of ankle clonus, and vesical and rectal disturbance.

Negative results were also obtained in the case of

a woman of middle age, who consulted me in February, 1887, and who for several years had suffered from the effects of an obliteration of one of the cerebral arteries, one of the results being left hemiplegia.

Another patient, past the meridian of life rather from physiological than chronological cause, and suffering from impotency, was taken in hand on February 23, 1887. After a month's treatment he was not materially improved.

On October 4, 1886, I began the use of static electricity in a case of ovarian insanity. After a month's treatment I was obliged to admit to the patient's friends that I could do her no good.

In a case of religious melancholia in a young unmarried woman, who came under my care in December, 1886, I also used the static current. She ultimately recovered; but I attribute the cure rather to the means taken to improve her general health and to removal of the constipation and menstrual irregularity from which she suffered.

For fear that further recitals of the foregoing character may convey the impression that failure is co-extensive with success in the matter under consideration, I will now mention a few other cases in which the results of treatment were of a happier nature:

In March, 1887, I was consulted by a delicate woman, the mother of a family. She had passed the period of the menopause, but complained much of her general health and of insomnia. Her principal trouble was a disturbance of the thermogenic function, the sensation of cold in the extremities being so severe at night that she was obliged to resort to various artificial means in order to bring about sleep.

This sensation in reality was not accompanied by loss of heat, the symptom being purely subjective, and one of exaggerated sensibility to cold owing to inability on the part of the nervous system to make an instinctive comparison between two mesological conditions; or, in other words, a disturbance of the thermic sensibility. Even in a state of health an inability to make a correct comparison of this kind, as we know, gives rise to the incongruity existing between heat and cold as experienced by the human body and the actual temperature as revealed by the thermometer. Travelers and experimenters having often noticed that these sensations are not absolute, it is proposed to differentiate the phenomena as physical cold and physiological cold, the former indicating that revealed by the thermometer or calorimeter, the latter that of a purely subjective nature and not indicated by instruments.

If not straying too far away from my subject, I shall ask your indulgence to relate some personal experiences in which these relative sensations were observed by me in different latitudes. On a polar voyage to the Siberian Arctic in the middle of July, I have seen the decks covered with snow and hail, that was accompanied by a bitter cold wind that penetrated one's winter clothing, and a few days afterwards, when the thermometer registered but 45 F., the heat was extremely uncomfortable. Again, in the latter part of June at St. Michael's, Alaska, the sun was almost overpowering, although the thermom-

eter registered but 60° F. In striking opposition to this is the piercing cold that I have experienced on being exposed to a "Levanter" in the vicinity of the Mediterranean Straits off the coast of Morocco, and to Texas northers, during the continuance of which the cold is felt more acutely than it would be in the Arctic regions. This phenomenon is also noticed among the Andes in Peru. A disagreeable sensation of cold not indicated by the thermometer is one of the experiences of travelers in that part of the world, the cold being keen and penetrating with the mercury standing at only 60°.

Numerous instances might be cited in which Arctic travelers have noted such relative sensations, as well as the impunity with which they have exposed themselves to a low temperature that would be attended by serious results in a more southern latitude. After supporting cold of — 47° F. the sensation of — 29° or 24° is an agreeable one. Dr. Hayes relates that in Greenland he went swimming in a pool of water on the top of an iceberg. The captain of a New Bedford whaler has often gone swimming off the coast of Siberia. On one of the physiologically warm days that sometimes occur in high latitudes, I plunged in the icy waters of Kotzebue Sound, and after the momentary sideration that accompanied the shock had passed away there was no great discomfort. The swim was, moreover, followed by a pleasurable reaction.

The physiological action of cold upon the nervous system deserves a more prominent place, since it is through the nervous system that results the instinctive comparison of heat and cold. Moreover, sensation as regards cold is not always accompanied by loss of heat. That it may be purely subjective, not only in disease but in health, it is the object of this digression to set forth.¹

The second case coming under my observation in which there was a more marked subjective sensation of cold unattended by any objective manifestation, was that of a neurasthenic theological student who complained of a feeling of icy coldness in the right hand and lower half of arm. Why such a sensation should exist without the appreciable subtraction of heat I am at a loss to explain. In the human species the sensation caused by the absence, loss, or diminution of the mode of motion known as heat does not follow the oscillations of the exterior temperature as a grapevine or a marmot; but is dependent upon the state of the organism and other individual conditions. A common instance of this condition is seen in the cold stage of intermittent fever, which shows an elevation of temperature much above the normal, not only during but preceding the appearance of the chill. The sensation of cold in other cases is not produced, in spite of real and progressive cooling of the body, such as is noticeable in the algid attack of pernicious fever or the lowering of temperature during the sensation of heat that accompanies the reactive stage of a cold bath. On the other hand, in locomotor ataxy with greatly diminished sensibility, patients have been known to be unable to wash in

¹ See writer's article on Cold in the Reference Handbook of the Medical Sciences.

cold water without experiencing the keenest pain, and subsequent discomfort. Sometimes in myelitis a piece of ice placed on the skin of the trunk causes a disagreeable burning sensation. I know of a case of neuritis in which the application of hot water produced a sensation of cold. Most of us know of the subjective chilliness following doses of aconitia. An abolishment of the sense of cold occurs in some swimmers accustomed to passing long hours in the water; and the mind also makes the body less sensible, as in the case of ecstatic thoughts, lively emotions, or derangement. Familiar instances occur in religious devotees; in delicate women who, through vanity, forget their habitual sensibility to cold and expose the neck and shoulders to freezing temperatures; and in the insane, who often go stark naked in winter without being affected by the cold.

I shall leave it to others to trace the relativity of the foregoing remarks with the cases in question; and will state that the perverted thermic sensations were promptly relieved by no other treatment than that of the electro-static remedy, the immediate effect of which was to cause increased sensation of heat and slight diaphoresis when applied by insulation and sparks.

Other cases in which static electricity acts with a promptness not procurable by any other remedy are those of myalgia, subacute or chronic rheumatism, gout, and inflammation of the neurilemma of the sciatic nerve. I have in mind numerous cases of what are popularly known as stiff neck, crick in the shoulder, and lumbago, all of which promptly disappeared after one or more applications. The patients in all these instances attributed the origin of their malady to cold; the morbid influence of which, by the way, is greatly exaggerated not only by the laity but by physicians themselves, who attribute so many ailments to this cause that to enumerate them would almost be to repeat the nosological table. Many morbid conditions are attributed to cold in which this agent in reality takes no part or is only an accessory. Many old and even some contemporary authors rank under the head of maladies from cold such general diathetic diseases as gout and rheumatism, and speak of the latter as a prominent disease of cold countries; when, as a matter of fact, rheumatism belongs rather to temperate climates, being met with in India and Egypt, but not in the polar regions. The returns of the English Army, which is stationed nearly all over the globe, show the truth of this assertion. Take a single instance: At Nova Scotia a proportion of 30 cases of rheumatism to the 1,000 occurred; while under the more temperate climate of the Cape of Good Hope there were 57 in the 1,000. On two successive voyages to the Siberian Arctic I have not met with a single case of bronchitis or rheumatism, or even a common cold except among Eskimo—who, by the way, appear not to stand cold so well as white men. During the last few years circumpolar parties have escaped all sickness, and sledging expeditions have been exposed to continuous cold of -50° with no great inconvenience. That cold does occasionally provoke an attack of one of the forementioned diseases may be admitted,

but to speak of it as a pathogenic cause is just as absurd as to say that cold causes typhus and scurvy, or cirrhosis of the liver and chronic nephritis. As a cause of disease or of death cold no doubt brings us into the presence of a great number of affections, yet we may eliminate many diseases, the origin of which is improperly attributed to the effects of cold upon the organism, this agent in truth being only an indirect or quite accessory fact.

A circumstance that sometimes arises in connection with the application of electricity is one concerning the doubts and fears of patients with heart trouble. This feeling seems to be inspired through the popular mistake that they are to be shocked, or have a thunderbolt hurled at them. An illustrative observation is that of a matronly person who consulted me in August, 1886. She was anæmic and neurasthenic, and had the cardiac symptoms usual to such conditions. A short stay at a Southern seaside resort had proved of no benefit, and she had been particularly counseled by her physician to avoid sea-bathing and electricity. After two weeks' treatment I allowed my patient to go to Atlantic City, with instructions to take a dip in the surf of a minute only at the first bath, and gradually prolong the time a few minutes each day. My directions being faithfully carried out, inured to the ultimate benefit of the patient, who stated on her return that she had not felt so well for years. At present her health is such that she has nothing to complain of.

Every physician knows how tedious and difficult, and barren in results, is the treatment of copodyscinæ—an affection that appears to be more observed of late than formerly. We now find it as one of the common neural disorders in artisans of various classes, such as the haphestic palsy of boiler-makers, the "loss of grip" of telegraph operators, and the affection known as "Charlie horse" among professional base-ball players. I have also lately seen a case in a woman whose occupation for a number of years has been counting greenbacks in the Treasury Department. Another case worthy of mention is one in which the disorder was most apparent in the muscles concerned in writing. It occurred in an adult male whose vocation necessitated a sedentary and monotonous life. The treatment, begun January 23, consisted of daily applications of electricity by insulation and sparks, relaxation from work, and a Sunday ramble in the country. On March 4 he was discharged cured.

I now finally call your attention to a case of paraplegia that I have treated with the happiest result. It is that of a man of 51, who was brought to my office in a rolling chair in May, 1886. He stated that he had been paralyzed from the small of his back downwards for more than a year; that formerly he suffered from severe pains in the limbs, but at present slept well and enjoyed a good appetite, although suffering from constipation and occasional difficulty in evacuating the contents of his bladder.

The patient's general history was good, but having been a soldier in the late "unpleasantness," he had an attack of dengue fever in 1863, and suffered subsequent privation as a prisoner of war, which left him

with what was supposed to be sciatica and rheumatism.

On examination I could find no outward, visible or tangible manifestation of rheumatism, and no appreciable cardiac lesion, the heart's action being normal and but slightly excited.

I immediately applied the actual cautery to the lower dorsal spine, and continued the treatment by drawing long sparks from the back and paralyzed limbs. Rapid improvement took place. The patient now walks without lameness and is, in fact, well. He has been good enough to come here this evening, and I shall show him to you presently.

If I chose to incur additional risk of being tedious, these remarks might be prolonged by further reference to considerations of a therapeutic, physiological and mechanical character; but this is not the time or place for a more extended exposition. I may, however, add that former objections to static electricity have been done away with, owing to the construction of superior machines in which the tension and quantity are within the control of the operator. The one that I use consists of six 26-inch plates driven by a Tuerk water motor. It does all the work of the best Faradic machines, and is more serviceable than ordinary galvanism. Removal of the patient's clothing is unnecessary, and the current may be so regulated as to range from an agreeable sensation or an almost imperceptible tingle up to extreme muscular contraction.

The manner of applying is by insulation, sparks, shocks, and the induced current. The patient being placed upon a taboret and electrified, a difference of potential takes place, his body being raised one potential higher than that of the earth, which is zero. By means of an umbrella electrode an equalization of potentials is provoked, giving the effect of *spray or electric wind*; and if an electrode be approached or placed in contact with the patient's body, a more vigorous equalization takes place, manifesting itself in the form of sparks, which become more violent as the patient's potential is increased. The application of the static induction current to the human body with physiological results is among the latest novelties, and the nerve and muscle reactions produced thereby are now admitted by all physicians and electrical experts. It is difficult to tell just what the ultimate molecular disturbance is that takes place in the cure of the myriad manifestations of hysteria, nervous exhaustion and hyperæsthesia when static electricity is used. Every physician knows how common and how perplexing such cases are. But if, at the right moment, the proper agent is applied, we get a result that forces upon us the conviction that static electricity has therapeutic effects peculiarly its own; and it is no figure of speech to say that the lightning which Franklin drew down from the heavens has become the physician's most useful handmaid.

1732 H. St., N. W.

MERCURY IN BLOCK-TIN.—A large mortality among workmen in a tin smelting place in Nuremberg caused an investigation, which showed that the block-tin contained 3 per cent. of mercury.

SOME POINTS IN THE MANAGEMENT OF TYPHOID FEVER.

Read to the Thirty-first Annual Meeting of the Missouri State Med. Association, Kansas City, Mo., April 19, 1888.

BY I. N. LOVE, M.D.,

ST. LOUIS, MO.

I shall not fatigue this body with a labored paper on typhoid fever, giving in detail its history, etiology, clinical characteristics, etc., for being, as you are, busy workers in the profession, you are in no need of an exhaustive and exhausting elaboration of the subject. I feel safe in taking it for granted that you are all familiar with the literature.

Through the researches of Koch, Eberth, Meyer, Friedländer, Gaffky, and later of Fränkel and Simonds, the typhoid bacillus has become an entity that must not (and cannot safely) be lost sight of during the progress of a case and after its termination.

The points I propose to present are the result of observations made in hospital and private practice during the past sixteen years, some of them being more particularly emphasized during a series of cases occurring within the past six months.

I think we are too much inclined to be on the lookout for classical representations of this disease, as of many others. I have had a number that I placidly considered simple continued fever; temperature not ranging higher than from 101° to 103° , no rose spots, no tympanites, no special evidence of intestinal irritation, nothing leading me to suspect typhoid fever until suddenly aroused to an appreciation of the fact by dangerous and repeated hemorrhages from the bowel, and in one instance (in 1877) the bleeding continued until it proved fatal. This occurred in a boy of six, and was convincing proof to me of the fallaciousness of the idea that formerly obtained, that young children were not susceptible to the malady. In this connection, I recall the circumstance of a consultation visit made to a young man who had been ailing for some weeks, though he was up and about until a few minutes before the family physician was summoned and found him suffering great agony. An investigation developed an intestinal perforation, which caused death in a short time. The clinical history and the post-mortem revelations evidenced an illustration of "walking typhoid fever."

We know that we frequently have scarlet fever so mild as to be entirely overlooked, until the attention is aroused by grave nephritic trouble; and so in all diseases, the artistically perfect specimen is the exception and not the rule.

It has, no doubt, been the observation of all, that the course and complications of typhoid fever are as varied as the individual victims, but it was not recognized till lately (by Griesinger) that numerous light and rudimentary attacks (typhus levisimus) belonged to typhoid fever at all; they used to have all sorts of names applied to them, as suggested by Strümpel, the favorite being "gastric fever."

The diagnosis is of course difficult in proportion to the scanty development of typhoid symptoms,

and it is best established by demonstrating an etiological relation between them and others that are plainly typhoid fever. Apropos to this mild class of cases, I remember a case under my observation last December, a five year old boy, in a family where three other cases developed, (one fatal) of a violent character; the child was sick only about twenty-one days, and under ordinary circumstances his case would have been diagnosed simple continued, or remittent fever.

As the individual manifestations may vary, so, too, do entire epidemics. One season the type is violent, and another mild. During the past six or eight months I have had under my care an unusual number of typhoid fevers, and these, together with nearly all that I have observed for two or three years past, have been much more favorable in their results, due possibly more to the mildness of the infection than to the character of the treatment, though I am persuaded that the latter had something to do with the favorable showing.

Since about July 21, 1887, I have kept a record of 36 cases, and of that number 2 died—of those one really died of acute mania superinduced during the period of convalescence by sudden shock and grave domestic sorrow, she being a nursing mother, of intensely neurotic temperament—the other was a delicate, over-worked girl of 16 years, with tubercular diathesis, and sick for ten days before a physician was called, she having been six days and nights without sleep, and in fact died from meningitis as a complication.

There are those who believe that, by active interference, typhoid fever may be aborted; though I am not ready to endorse this proposition, I am sure it may be modified and abbreviated. I cite briefly the following as an illustration: July 21, 1887, J. T. C., taken with violent vomiting and intense abdominal pain; examination revealed a lusty, plethoric youth of 18, red tongue heavily coated, pulse full and 140 a minute, temperature 105.5°, acute tenderness over abdomen, with constipation. Remedies were ordered for opening the bowels, soothing the stomach, and reducing temperature. After the lapse of twelve hours an action of the bowels had been secured, but no improvement of the general conditions. At once ordered 1 gr. of calomel every hour, and the application of ten leeches over stomach and the ileo-caecal region, at point of greatest tenderness, followed by hot fomentations. The leeches abstracted five or six ounces of blood, giving marked relief; at the end of ten hours the 10 grains of calomel had produced active purgation, and this, together with the local abstraction of blood, had mitigated all the symptoms; the temperature was down to 102°, the pain and tenderness almost gone, no nausea, no vomiting. The patient was in every way more comfortable, and jogged along for four weeks with a mild form of typhoid fever instead of dying during the first five or ten days, as I believe he would have done had a temporizing course been pursued.

Recognizing the disease as an infectious one dependent upon a specific virus, it behooves us to treat

it upon the antiseptic plan, aiding elimination by stimulating the excretory organs, sustaining the strength by diffuse stimulation at the proper time, and the furnishment of an abundance of nutrition in a form for prompt assimilation.

Since the introduction of antipyrin, the dangers of high temperature are much less than formerly, as we can certainly control that feature; however, I favor the very careful administration of the drug, until full opportunity is given for the ascertainment of susceptibility. There have been recorded already a number of unfavorable results, even death itself, owing to some peculiar idiosyncrasy. I prefer small doses (5-10 grains to adults) at short intervals, keeping up the effect continuously, rather than large doses, and sudden and excessive falls of temperature. I think a sudden reduction, no matter how obtained, is not so likely to be maintained; sudden reductions are depressing, and endanger heart-failure, and prompt return elevation. While antipyrin is of great value as a febrifuge and tranquilizer of the nervous system, and at the same time diaphoretic, I feel that in the cooling bath we have an agent equally or even more valuable. By cooling bath I do not mean the sudden immersion in cold water; that is uncalled for, undesirable, and brutal. The temperature of the water at first should be about the same as that of the patient, and may be gradually reduced down to 85° or 80°. The bath may be prolonged five or ten minutes. I doubt not you have all seen, as I have, patients wildly delirious, go calmly to sleep during the progress of the bathing. The advantages of the bath, I take it, are:

1. The reduction of temperature is accomplished gradually and comfortably to the patient in accordance with nature's plan of putting out fire by water.
2. The water acts primarily as a soother of the peripheral nerves, and secondarily calms the disturbed nerve centres.
3. It stimulates the secretory glands, allays thirst by being directly absorbed into the heated and dry tissues, hungering and eager for drink; encourages diaphoresis as well as diuresis.
4. It influences favorably the respiratory organs by energizing inspiration; and thus aids in the securing of expectoration, and as a result, bronchial complications are less frequent.
5. The hygienic effect upon the skin is of great value, removing, as it does, the foul-smelling products of the sweat and sebaceous glands, aiding in the procurement of strength and elasticity to the cutaneous and adjacent tissues, conditions antagonistic to bed-sores.

Of course it goes without saying that the bath should be administered with due regard to the comfort of the patient; drafts should be avoided, and immediately following the bath a thorough drying and brisk rubbing should be instituted, and warm covering, with hot water bag to the feet if need be, and a nice cup of hot broth or a little wine or toddy would be in order.

I think antipyrin and bathing or sponging may be used conjointly to good advantage. As an antipyretic, quinine should be ruled out altogether; in

doses sufficiently large to reduce temperature it is demoralizing to the nervous system as well as to the digestive tract, and when we recall the fact that the sheet-anchor of hope in typhoid fever consists in good digestion and nutrition, and tranquil nerves, we can see that the objection to quinine is well founded. If well-defined malaria presents itself, as a complication, an antiperiodic is of course indicated, and quinine should be given, but very carefully.

In this connection permit me to express the opinion that the so-called typho-malarial fever of Woodward is a misnomer, being probably nothing more than a modified expression of typhoid fever plus malaria. Certainly the coining of new names for every modification of a disease is confusing, and the practice should receive no encouragement.

What has been said above need not be interpreted as an objection to the use of tonic doses of quinine during the period of convalescence, but as against the administration of quinine to an unadulterated case of typhoid fever. In the earlier, middle, or later stages of the disease, there may come a time when the necessity of the situation demands the removal of the patient from one section of the country to another; I desire to place myself on record as being strong in the opinion that the danger of removing a person seriously sick has been much overrated; that with due care and a guarding against the chilling of the surfaces, and the interruption of the proper amount of sleep, typhoid fever and other dangerous cases may be safely transported hundreds of miles. I have a record of four cases successfully and advantageously removed from one hundred to one thousand miles on sleeping cars, which justify this conclusion.

As the administration of the calomel purge in the beginning is satisfactory, so the renewal of $\frac{1}{8}$ grain doses every other day, to the number of a half dozen, is an advantage in the direction of keeping the bowels open, as well as serving as an intestinal antiseptic. If an additional aid is required to evacuate the bowels, an enema of a teaspoonful of glycerin will be efficient. *En passant*, I desire to emphasize the value of one dram injections of warm glycerin (as suggested by Anacker) into the bowel as a ready means of securing a prompt evacuation.

Permit me to emphasize the most salient points I desire to make by summarizing as follows:

1. Typhoid fever varies in intensity, severity, and length of attack, as do other infectious diseases, and while it has not yet been established that any of this class can be aborted, yet typhoid, with all the others, may be mitigated and abbreviated, and unfortunate complications and sequelæ prevented.

2. To the securing of this end I think that which is of paramount importance, is management, rather than medication, though there are many dangers that can only be tided over by the prompt and proper exhibition of drugs.

3. The administration of remedies that are antiseptic and stimulate the excretory organs is important, and for this purpose small doses ($\frac{1}{32}$ grain) of bichloride, or the mild chloride ($\frac{1}{8}$ to $\frac{1}{4}$ grain), as often as is necessary to produce an effect, is of value.

4. Nutrition, by the administration of food in a

form for prompt assimilation, is a necessity, and to this end the diet should be limited to peptonized milk, beef peptones (Rose's), bovine (Bush), etc., bearing in mind that the stereotyped home-made beef tea is of no more value as a food than a weak toddy, being a mild stimulant, and nothing more.

5. Freedom from pain, tranquility, and perfect rest should be insisted upon, and remembering that this disease of all others has a wrecking effect upon the nervous system (it having been called by some German writers *feber nervöse*, or nervous fever), we should see to it that our patient obtains not less than twelve to sixteen hours sleep out of the twenty-four, and the remainder of the time be saved from the meddling, mis-directed kindness of overzealous friends.

6. For the obtaining of sleep and the relief of nervousness, the administration of antipyrin, chloral, paraldehyde, urethan, and the bromides, is preferable to opiates, though occasionally the latter are demanded.

7. When the conditions surrounding a patient are unfavorable, and a change is desirable, even to a distant point, the removal, under proper precautions against chilling and unrest, may be permitted or even preferred, the danger of the same not being as great as it is generally considered to be.

8. As a rule, a patient with typhoid fever, or any other wasting disease, should not be permitted to have bed-sores; they are an expression of starved tissue and neglected skin, and are preventable, the means for their prevention being proper nutrition and bathing.

CASES OF ABDOMINAL SURGERY.

8. Removal of Uterus for Fibroma—Death. 9. Digital Dilation of Stenosed Ileo-cæcal Valve—Recovery. 10. Loret's Operation—Death. 11. Ovariectomy—Recovery. 12. Stab-wounds of Liver and Colon—Recovery. 13. Resection at Ileo-cæcal Valve for Epithelioma—Recovery. 14. Artificial Anus for Encephaloid Obstruction of Bowels—Recovery. Death from Peritonitis.

Read before the Philadelphia County Medical Society, April 11, 1888.

BY J. M. BARTON, M.D.,
OF PHILADELPHIA.

(Concluded from page 519.)

Case 8.—Large fibroma of the uterus. Removal of uterus and ovaries by abdominal section; death on the fourth day.—Mrs. S., æt. 32 years, a patient of Drs. Skilling and MacOscar, of this city, had been ill for two years, and had been bleeding for sixteen months. During the last six months she had never been free from bleeding more than a week at any one time, and for the last ten weeks, she stated, she had bled daily from two to sixteen ounces, the latter amount only after exertion, this confined her constantly to her bed or lounge. She had a good appetite, good digestion, and was well nourished though exceedingly blanched.

The diagnosis of large submucous fibroid was made when I first saw her, six months before, and full doses of ergot had been taken constantly, during all that time, without effect.

At the time of operation, the enlarged uterus reached to the umbilicus, was perfectly smooth and regular in its outline and quite movable.

On December 9, 1886, with the assistance of Drs. J. C. Da Costa, Porter, Skilling and Fisher, the operation was performed. I made a long median incision from the pubes to some inches above the umbilicus; there were no adhesions, the uterus was readily elevated and a short "Thomas" clamp placed upon its neck.

After the broad ligaments had been tied and divided, the body of the uterus was removed about an inch above the clamp.

As the abdomen was quite deep and its walls quite thick, it was utterly impossible to bring the pedicle outside, a strong silk ligature was passed through the neck, below the clamp, and tied on each side.

When the clamp was removed the parts above the ligature were found to consist of uterine wall, enclosing a section of the tumor; on removing the latter the uterine walls required but little attention to make very perfect flaps, they came together without tension and were held in position, with their peritoneal surfaces in close contact, by a continuous catgut suture. The toilette of the peritoneum was carefully made and the abdomen closed.

The uterus removed was about seven inches in diameter and contained a submucous fibroid, attached to nearly the entire inner wall; in size and attachments it is nearly identical with one, also removed by abdominal section, which I presented to this Society some years ago.

The patient rallied well from the shock of the operation, and by the following day was quite cheerful, with good pulse and temperature, but she had secreted very little urine. On the third day some regurgitation of bloody fluid occurred from the stomach, the temperature increased and the urine was still scanty. There was no abdominal tenderness or distention. By evening delirium occurred and death ensued the following day. The nurse assured me that only three ounces of urine had been secreted during the four days.

On post-mortem examination there were no evidences of peritonitis except slight adhesions of the bowel lying in contact with the uterine stump. The ureters and the bladder were uninjured, no bleeding had occurred, the uterine stump had remained well closed. The uterine wound was quite clean, no decomposing or offensive fluids were present. Some small portions of the very edges of the flaps looked as though they were beginning to slough, though very much less than I feared would happen when I ligated the neck. I think, in future, I shall content myself with ligating the arteries of supply and omit the ligation of the uterine neck.

Case 9.—Stricture of the ileo-cæcal valve; chronic obstruction of the bowels. Laparotomy; digital dilatation of the stricture; recovery.—Mrs. Ann H., æt. 37 years, a patient of Dr. D. S. Jones, of Plymouth,

Pennsylvania, was admitted to the Jefferson Medical College Hospital in May 1887. She had been in good health until the birth of a child in May, 1886. Since then she had had repeated and increasing attacks of obstruction of the bowels; during which there were entire loss of appetite, obstinate constipation, constant vomiting, great abdominal pain, and tenesmus, similar, she stated, to labor pains. Lately there had appeared at these times a tumor in the lower part of the abdomen about the size of the adult fist; these attacks occurred about once a month, and as they lasted three weeks she had but a short interval of comfort between them. When free from the attack, she stated that the tumor returned to the right iliac fossa, where she thought she could distinguish it by palpation and its tenderness on pressure. I was unable, at this time, however, to recognize any unusual mass in this situation.

I kept her under observation until an attack should occur. On May 21, an attack began, and her sufferings fully verified her statements. The tumor appeared between the umbilicus and the pubes, it was about the size, and very nearly the shape, of the adult kidney.

On May 2, 1887, in the presence of Professors Gross, Parvin, Brinton, and several other physicians, I made a median incision about four inches in length and exposed the mass; it proved to be an intussusception of the ileum into the colon with a thickened and contracted ileo-cæcal valve forming the apex of the intussusception.

There were slight adhesions between the contiguous layers of peritoneum covering the bowel, which were readily broken up, and the intussusception reduced.

On examining the ileo-cæcal valve by a finger invaginating a fold of the colon, it was found to be hard and contracted. A longitudinal incision was made in the colon about one inch in length, and three from the valve, through which I passed my finger and found the valve contracted to about the size of a crow's quill (one-fifth of an inch). It was slightly thickened, quite hard, white in color, and did not bleed during the examination or subsequent manipulations. It was considered by all present to be a case of cicatricial stenosis due to some previous inflammatory action, and certainly not malignant. It was dilated, with considerable difficulty, by the introduction of the little finger, the index finger was then carried through its entire length.

The wound in the bowel was closed by a continuous silk suture, including only the mucous membrane; the peritoneal mucous coats were brought in apposition by a continuous silk Lembert suture.

All the operative procedures upon the bowel were performed outside of the abdominal cavity, the abdominal wound being kept closed by sponges. The portion of bowel outside was thoroughly washed and returned, the abdominal wound was closed in the usual manner.

There was some vomiting after the operation, the patient was kept slightly under the influence of morphine for a few days, and on a milk and broth diet. The bowels opened naturally on the eighth day, the

stitches were removed on the fifth and sixth days; the temperature never rose above 100°. She returned to her home entirely free from all her previous symptoms, and remained free for several months.

[Her subsequent history appears later in this paper.]

Case 10.—Obstruction of the pylorus. Digital dilatation by Loret's method; death from exhaustion.—George H., German, æt. 58 years; blacksmith. His health had always been good until the last year. At the time he came under my care he had the typical symptoms of complete pyloric obstruction, with a well-marked tumor at the usual situation, it was not very large nor hard, had no marked outlines, and presented the characters of pyloric thickening more than those of a malignant growth. The microscopical examination of the matters vomited gave no evidence of malignancy, and no vomiting of blood had occurred. He was greatly emaciated, and so feeble that at first I refused any operative interference; the operation had, however, been explained to him, and its performance promised before he came under my care, and he insisted so strongly on having a chance for prolonging his life that I consented.

The operation was performed at Jefferson Medical College Hospital May 22, 1887, in the presence and with the assistance of Professor Brinton, Dr. Wirgman, and quite a number of others.

As the patient's condition warranted no further interference than mere dilatation of the pyloric orifices, and as the usual incision to the right of the median line would have exposed the stomach nearer to the pyloric orifice (as shown by the position of the tumor) than I desired, I made the incision directly in the median line, and about three inches in length, beginning an inch and a half below the ensiform cartilage.

The stomach was readily exposed three inches from the pylorus. The examination of its exterior threw no new light on the character of the growth, though the stomach at this point was found to be slightly adherent to the structures beneath. An incision, a little over one inch in length and three inches from the pyloric orifice, was made in the stomach, parallel to and directly beneath the abdominal incision, the coats of the stomach were much thickened. Complete stenosis of the pyloric orifice was found when the finger was introduced, this was readily dilated with the little finger, while the tumor was supported outside the abdominal walls with the left hand, the orifice was then further dilated by the index finger.

The thickening and infiltration of the walls of the stomach at the point of incision prevented the use of the Lembert suture, their softened condition evidently required the suture to pass through all the coats. As the abdominal wound was directly over that in the stomach, the latter was closed and brought in contact with the abdominal wound, so that the visceral and parietal peritoneum might adhere, and if any of the contents of the stomach should escape or any pus form, they might readily drain outside and not into the general peritoneal

cavity. Fine silk with two needles were used, these were carried from within outward through all the coats of the stomach, one needle through each lip, then crossed and one brought through each lip of the abdominal wound, a few were carried direct without crossing. These sutures were tied and the abdomen closed.

Nothing was given for the first twenty-four hours by the stomach, the rectal nourishment upon which he had relied previous to the operation being continued. No vomiting occurred during the four days that he lived, on the second day milk and hot water were given in small doses at regular intervals, and as they were well borne they were increased in quantity and frequency. Notwithstanding the fact that he took over a quart of milk per day, besides rectal nourishment, he sank and died exhausted on the fourth day after the operation. There had been no elevation of temperature.

At the autopsy the stomach was found firmly fastened to the abdominal wall, there was no evidence of any peritonitis. In the interior of the stomach it was difficult to find the point at which the incision had been made, the sutures being completely buried in the folds of the mucous membrane. The pyloric thickening was inflammatory in character, and not due to any malignant growth.

There was complete obstruction previous to the operation, there was none after, and had the patient been subjected to operative interference earlier there is no reason why his life might not have been greatly prolonged.

Case 11.—Ovarian tumor. Removal; recovery.—Miss A., æt. 38 years, had noticed a painless abdominal enlargement for a few months. On examination I found a small ovarian cyst, lying in the median line and rising slightly above the umbilicus. On May 23, 1887, with the assistance of Drs. Da Costa, Edward Graham, Sweet, and Fisher it was removed. The incision was about three inches in length, the tumor was non-adherent. It was tapped, drained, and removed in the usual manner; its pedicle was tied with silk and dropped.

The peritoneum was brought together with chromicized catgut, the interrupted silk suture being used for the other tissues. The patient made an uninterrupted recovery, her temperature never rising above 99°. The tumor weighed about fifteen pounds.

Case 12.—Two penetrating stab-wounds, one puncturing the liver and one the transverse colon. Laparotomy; recovery.—Michael H., æt. 25 years, was admitted to the Jefferson Medical College Hospital at 3 P.M., of September 9, 1887. About three hours previously he had been stabbed twice with a small and pointed amputating knife, during a quarrel in a house of ill-fame.

There were two wounds, both penetrating the abdominal cavity, both at the outer edge of the right rectus muscle, and both running diagonally toward the median line, and penetrating the peritoneum at that point. The upper was one and a quarter inches long and was just below the edge of the ribs, it terminated in the left lobe of the liver, from it there was free venous bleeding.

The lower wound was three-quarters of an inch long; it was three inches below the upper and just above the level of the umbilicus. After hurried antiseptic preparations, I opened the abdomen in the median line from the ensiform cartilage to the umbilicus, and found an opening about five-eighths of an inch in length in the transverse colon parallel to its length and near its mesenteric attachment; this was closed by the continuous silk Lembert suture. The suture failed to control a small artery in this wound, but a separate stitch carried under it and tied secured it.

The wound in the liver was small, it had ceased oozing, and as its lips were in fair contact no suture was used. The abdomen was cleansed, the wound closed and dressed in the usual manner.

The following morning his temperature was 101° and in the evening 100° ; after that, though it kept quite low, varying from $98\frac{1}{2}$ to $99\frac{1}{2}$, he had a sharp attack of peritonitis, lasting three days, during which time there was constant regurgitation of bloody fluid. The abdomen was painful and greatly distended with gas, requiring the constant use of the long rectal tube to relieve him. The stitches were removed on the fourth and fifth days, and the abdomen supported by adhesive plaster. He was discharged cured on September 29, having been in the hospital twenty days.

Case 13.—Epithelioma of the ileo-cæcal valve. Resection of three inches of intestine; recovery.—Mrs. H., æt. 38 years, the same patient whose ileo-cæcal valve was dilated seven months before (see page 547), came complaining of a return of her former symptoms, her sufferings were slight, but were evidently of the same character as before the first operation.

November 1, 1887, with the assistance of Drs. Allis, Kendig, Stillwell, and the resident staff, I again opened the abdomen. A straight incision parallel to the median line was made, it was three inches in length terminating at a point one inch outside the middle of Poupart's ligament. The incision was made at this point as the nearest to the portion of bowel I wished to attack, because I feared adhesions might have formed after the last operation, rendering it inaccessible from any distant incision; and, further, if it became necessary to form an artificial anus, it would be a convenient point.

I had decided that if it should prove to be a retraction of the stricture, to make a longitudinal incision about two inches in length carried through ileum, ileo-cæcal valve, and cæcum, bringing the two ends of the wound together and sewing it up transversely; this would best be made on what would be the under surface of the bowel when the patient stands erect. I tried this on the cadaver and found it practicable, and that it increased the circumference of the bowel, at that point, about two inches.

The head of the colon was readily found, there was no return of the intussusception, no adhesions had formed, though in reducing the intestine at the first operation there had been slight bleeding at a number of points where adhesions were torn. The scar of the original intestinal incision was scarcely

perceptible. At the ileo-cæcal valve, however, there was now a decided tumor, and it was now evidently epitheliomatous.

An incision was carried into the mass verifying the diagnosis, the entire valve had become an irregular mass of epitheliomatous tissue varying in thickness from a half an inch to an inch, entirely obstructing the gut except an aperture in the centre, about one-third of an inch in diameter. The circumference of the valve was less thickened by the disease than the centre.

The abdominal wound was now closed by sponges, leaving the diseased parts outside; three inches of the bowel, including the disease, were removed; no clamps were used, the bowels being held in the hands of an assistant; a few vessels were tied.

As the mortality is very high when the separated ends of the bowel, in these operations, are sewed together and returned, I had decided if it became necessary to excise, to establish a temporary artificial anus and begin at once the proceedings for its cure. With this end in view, immediately after the removal of the diseased bowel and the ligation of the bleeding vessels, one blade of Dupuytren's enterotome was introduced into each portion of bowel, viz., one into the ileum and one into the colon, the two blades were brought together and the screw run down firmly. A strong ligature was placed on the ends of the bowel, including the enterotome, to prevent the escape of feces during the subsequent manipulations. The bowel was washed, placed in position at the lower angle of the wound and fastened there with a continuous silk suture. The abdominal wound was closed, covered with cheese cloth saturated with mercurial solution, and this in turn with patent lint soaked in sweet oil. This is the best method that I have found to protect abdominal wounds close to an artificial anus.

The heavy ligature around the ends of the bowel was now removed. A ring of cotton soaked in oil placed around the artificial anus, the outer extremity of the enterotome supported by oakum, and a wide bandage pinned over it. Morphine was used hypodermically during the first forty-eight hours and then discontinued; vomiting occurred during the first two days and then ceased. Some feces appeared on the evening of the operation, and full quantities two days later.

On the eighth day the enterotome was found loose, and was removed; its removal was preceded by a passage of feces from the natural outlet. The stitches were removed on the third and fourth days, and the wound supported by adhesive plaster. After the removal of the clamp the patient was permitted to rise, and all restrictions removed from her diet.

The bowels acted naturally for a few times, when all the feces came again from the artificial anus. The clamp was again applied on the 17th, and came away on the 28th. Its removal was again followed by a few natural passages. As these ceased in a few days the clamp was applied for the third time with a precisely similar result.

As this had proved ineffectual, the method of Mr. Banks, of Liverpool, was used. A strong ligature

was fastened to the middle of a heavy piece of rubber gas tubing about six inches in length, one end of the tube was passed into one bowel, the other end of the tube into the other bowel, the middle of the tube pressing against the spur. The position of the bowel in this case was such that the rubber tube was retained with difficulty. After trying it for ten days without success, I substituted the apparatus which I here show, consisting of two pieces of very heavy rubber gas tubing joined together like the letter T. The upper part of the T is about one and a half inches long, and presses directly against the spur; the other tube is three inches long, and merely serves to keep the first in position. The large base is circular, is three inches in diameter, and serves as a pad to prevent the escape of feces from the artificial anus. The three pieces of rubber are joined firmly by a strong wire running from the first to the last piece, and twisted tight. This method proved at once satisfactory, and a large proportion of the feces began at once to pass by the natural outlet, and continued to do so. The patient is now in the hospital, but I shall make no attempt to close the fistule until it is seen if the bowels will continue to act naturally.

During this prolonged treatment, fearing that the colon, from disuse, might contract, I directed that she should be given an injection of a quart of water daily, and I was surprised to hear that when a pint had been given it appeared at the artificial anus. By continuing these injections the capacity of the colon was rapidly increased, and when last tried it held three pints; of course, when the bowels began to act naturally this was discontinued.

Case 14.—Chronic obstruction of bowels by encéphaloid tumor. Exploratory laparotomy; artificial anus established; recovery from the operation; death fourteen days later from obstructive peritonitis arising from tumor. Francis O. B., æt. 38 years, Irish, carpet porter, a patient of Dr. James Robinson, with whom I saw him January 18, 1888. He was in perfect health until June, 1887, when he began to have slight cramps, once or twice daily, and occasionally at night, in the left iliac fossa. He continued working until December 24, 1887, and has been confined to bed since. His attacks had not increased greatly in severity, but he was getting much weaker. He had lost fifty pounds in weight; he vomited once or twice a week; it was not stercoraceous. He suffered greatly with tenesmus, which produced from ten to fifteen passages during the night, each being a small, hard, white mass about the size of a cherry.

The left iliac fossa was slightly tender. The abdomen was distended with gas. The pulse was 104, and the temperature normal. His pain was uninfluenced by food. He had never passed blood by the bowel. The rectum was found empty and unobstructed.

Later I removed him to Jefferson Medical College Hospital, by which time his pain was nearly constant, and he was unable to sleep without large doses of morphine. Some days after admission his temperature increased to 103°; there was increased abdom-

inal tenderness and other evidences of a slight attack of peritonitis, which disappeared in forty-eight hours. On the 28th he passed wind by the penis, and again on the 30th.

On January 30, 1888, with the assistance of Drs. Allis, Nancrede, Robinson, and the house staff, I opened the abdomen. A median incision about four inches in length was made, and a lobulated tumor the size of an orange was found in the angle between the bladder and the spine. The sigmoid flexure of the colon was tightly adherent to and partly buried in the tumor. The cæcum was carried toward the median line, and was also adherent to the tumor. The lower end of the ileum was closely adherent, and its calibre nearly obliterated.

The colon was contracted and collapsed; all the bowels above the point of obstruction in the ileum were greatly distended.

As nothing could be done with the growth, a fold of the ileum a few inches above the point of obstruction was brought out of the wound and fastened in its lower angle by a few silk sutures, a rubber drain was introduced, as a glass one failed to reach the desired point, and the abdomen closed. The drain was removed about twelve hours later, as I feared to have it remain in such close proximity to the artificial anus. Twenty-four hours after the operation the fold of bowel in the wound was opened, and the artificial anus established.

On the second day the patient was placed upon his usual food, stimulants, etc. The stitches were removed on the fourth and fifth days; the wound healed promptly. It was successfully kept from contamination by the fecal discharges, by the method described in a case reported above.

At the operation a fold of bowel was brought entirely out of the wound; this was adopted as a modification of the method of entirely cutting off the bowel, closing the lower end with sutures, and using the upper to form the artificial anus.

The method here adopted has the advantage of rapidity, less danger of contaminating the cavity with fecal matter, as the opening of the bowel may be postponed until firm adhesions have formed. It permits any gases or other material that may be imprisoned in the lower bowel to escape, and quite as effectually prevents any material passing the artificial anus into the lower bowel.

The patient was relieved of his pain, the vomiting ceased, and he slept well; had a fair appetite, and improved in appearance. All fecal discharges, and they were very copious, came from the artificial anus, and none by the natural outlet after the first twenty-four hours.

On the thirteenth day there was a slight elevation of temperature, and all fecal discharges suddenly ceased, injections of warm water carried some distance above the opening by a soft catheter were without effect; by evening vomiting and other symptoms of acute obstruction occurred, and he died twenty-four hours later, or fourteen days after the operation.

The post-mortem examination was made on the same day. The abdominal wound was solidly healed;

the bowel, at the artificial anus, was firmly attached to the abdominal opening. The abdominal cavity contained quite a quantity of opaque serum; the opacity was greatest near the tumor, and on pressing the tumor, thick, purulent-looking fluid exuded from it. This was probably the origin of the fatal peritonitis. The bowels were but slightly congested, and at one point only, about twelve inches above the artificial anus, were adherent. The bowel at this point was sharply flexed upon itself, and adherent for about three inches, causing complete obstruction. This adhesion was readily broken down by the finger, and it would probably have yielded to an active saline.

The condition of the bowels, as found at the time of the operation, was verified, the tumor was broken down, and had ulcerated into the sigmoid flexure; a large number of secondary nodules were scattered through the liver. The microscopical examination was made by Dr. Longstreth; the tumor and the nodules from the liver were reported by him to be encephaloid.

FIFTY CASES OF SCARLET FEVER.

*Read before the Suffolk District Medical Society, Section for Clinical Medicine, Pathology and Hygiene,
February 8, 1888.*

BY HENRY JACKSON, M.D.,
OF BOSTON.

I wish to present to the Section a short account of these cases, as an epidemic of this size always gives one an opportunity of making some interesting observations.

These cases occurred in the North End of Boston during the months of April to October.

April . . . 4	} Very mild.
May . . . 3	
June . . . 3	
July . . . 3	} More severe.
August . . . 10	
September . . . 24	} Much more severe, with throat trouble.
March . . . 2	
March . . . 2	} Severe type with diphtheria.
March . . . 2	

Total, 50

Of these cases thirty may be characterized as of a mild type. Prodromal period short, usually twelve to twenty-four hours; vomiting almost always present; headache and malaise; usually more or less complaint of sore throat. In cases where an examination at the early stage was possible, I did not find the appearance of the throat sufficiently characteristic to warrant a diagnosis of scarlet fever merely from this symptom. In no case were convulsions seen. The period of efflorescence lasted from twenty-four hours to four days, rarely longer. Temperature not high. Many of the children wished to be about the house, and were with difficulty kept in bed, even during the height of the eruption. Vomiting ceased in most cases on the appearance of the eruption; occasionally it continued until convalescence was established.

As the other cases presented some points of more particular interest, I will give them more in detail. In two cases there was no eruption and yet the diag-

nosis of scarlet fever seems to be fairly well justified. (1) Katharine McC., 15 years. Slept in a bed with two children who had well-marked eruption. She had a moderate fever, headache, malaise, and pharyngitis and tonsillitis (not follicular). Well on fifth day. No sequelae.

(2) Annie McL., 11 years. Lived in the same flat that three children lived in who had scarlet fever. No eruption, slight pharyngitis, mild febricula of a few days' duration. Of course scarlet fever would not have been considered except for the other well-marked cases. Under the circumstances it seems to me highly probable that her symptoms may have been due to scarlet fever.

Raphael B., 4 years. Acute lobar pneumonia on seventh day. Course of the scarlet fever mild and of no special interest. In four cases convalescence was delayed by suppuration of the parotid gland. One case was complicated with measles.

Mary McC., 2 years. Well-marked eruption of scarlet fever; severe catarrhal pharyngitis. On the fifth morning the eruption had faded, and the temperature was normal; that night temperature 102°, and body covered with a very fine punctate rash. Next day an abundant and well-marked eruption of measles. Catarrhal inflammation of eyes, nose and bronchi. Child very sick for a week. Pulse 160, temperature 103° to 104°, respiration 45. Lobular pneumonia in right front. In the latter part of the attack of measles the skin presented a very curious appearance, as the bright red papules of the measles were covered by the dried scales left by the scarlet fever. Urine showed a small trace of albumen and a few casts. Complete recovery.

One case only had very high fever.

Nettie McC., 6 years. Eruption well-marked; temperature 104° to 105° for several days; pulse 140; stimulants ordered. Disease was followed by leucorrhoea of several weeks' duration; and one month after the attack of scarlet fever she had articular rheumatism.

One case had cedema during convalescence without any apparent renal disease.

Nellie C., 6 years. Mild fever; no vomiting, slight pharyngitis; during convalescence very marked anemia, slight cedema of face, hands and feet. Careful and repeated examination of the urine gave a negative result as to the existence of renal disease. I attributed the cedema to the anemia, but found that Strümpell spoke of cedema as occurring after scarlet fever dependent upon molecular change in the walls of the bloodvessels.¹

Two cases of acute Bright's disease. In the second and third weeks respectively, after the onset of the scarlet fever, urine smoky in color, contained $\frac{1}{4}$ per cent. of albumen, large numbers of casts of various kinds. In each case headache, vomiting and general cedema. Complete recovery in each case.

The following case is one of great interest; and I fortunately have complete notes of the case, as the child was under the care of a trained hospital nurse.

R. F., 9 years. November 4. Eruption appeared,

¹Third edition. Vol. 1, p. 63.

very light; pharyngitis marked. For three days pulse and temperature very high. On tenth day temperature normal, and pulse 100. During convalescence pulse very slow and irregular, frequently intermittent; no murmur detected. Under small but frequent doses of tincture of digitalis and brandy pulse became rapid, regular and of good strength.

November 20. Sudden rise of temperature, with swelling of the glands of the neck. Examination of the urine negative.

November 23. Three weeks after the onset of the fever. Passed very little urine; vomited several times; slight oedema. Rise of temperature. Urine smoky; $\frac{1}{4}$ per cent. of albumen sediment that of acute parenchymatous nephritis. Gradual improvement in general symptoms and in the character of the urine until December 1.

After having passed a remarkably good day, the child woke on the night of December 1, and complained of severe frontal headache. Vomited several times during the night. These symptoms continued through the forenoon of December 2. Small dose of morphine ($\frac{1}{16}$) given on account of headache.

In the afternoon became somnolent, and soon completely unconscious. At 4 P.M., respiration 20, pulse 130; pupils not noted by the nurse. Diagnosis of opium-poisoning was made by physician, and treatment ordered accordingly.

I saw the child at 5.30. Found respiration 18, irregular in rhythm; pupils normal. He was inclined to sleep but when aroused answered questions intelligently. An hour later, roused with difficulty; when addressed, did not answer the question but counted 26, 27, 28, 29, 30. He never counted more than 30, always began with 26, and sometimes repeated the number 26 several times without counting further.

At 8 P.M., perfectly unconscious; respiration stertorous, irregular, two to four respirations being followed by a long pause, etc.; pulse 120; pupils regular and of normal size; convulsive twitching of the right side of the face and right arm, which lasted for about three quarters of an hour; no paralysis.

Next morning perfectly conscious; showed no symptoms, and had no remembrance of the events of the previous day.

For several days the urine was very scanty, contained a large amount of blood and albumen, and many casts. From this time on gradual improvement, until convalescence was completed. The distinctly localized convulsive twitching seemed to point to some lesion of the cortex; but I think that the rapid recovery makes it more probable that all the cerebral symptoms were dependent upon uræmia. There was at this time a slight systolic souffle at the apex, but no enlargement of the heart.

January 25. Boy stout and well; no murmur.

Eight cases had severe diphtheritic inflammation of the throat; that is to say, there was extensive ulceration, with membranous exudation on the tonsils and uvula, or pillars of the fauces. Cases in which several small gray patches were seen on the tonsils are not included in this list.

Flint, Henoch and Strümpell say decidedly, that though the disease is anatomically identical with the

condition usually found in diphtheria, the disease is etiologically distinct. Eichhorst considers it at least possible that the condition is due to true diphtheria implanted upon the already existing scarlet fever.

The chief arguments that the disease is not diphtheria are clinical in nature; namely, (1) Invasion of the larynx is rare; (2) paralysis rarely follows; (3) the disease is not so fatal as true diphtheria.

So far as any conclusions can be drawn from so small a number of cases, all of these arguments are refuted by the cases which came under my observation.

In only one case did the diphtheritic inflammation appear early in the course of scarlet fever; in the others the membrane was observed on the third or fourth day, or during the stage of desquamation.

One case died from invasion of the larynx by the diphtheritic membrane. In a second case there was probably membranous laryngitis, as evidenced by hoarseness and embarrassed respiration. The child died apparently from asthenia. I doubt if tracheotomy would have been of any avail, even if the parents had assented to the performance of the operation.

Two cases died of paralysis of the heart, one when convalescence was perfectly established, and one when the child was apparently improving rapidly.

The mortality was large, as four out of eight (50 per cent.) died.

Cases of especial interest are the following:

Millie H., 3 years. When first seen remains of a rash of scarlet fever; on both tonsils and uvula a dirty gray membrane, which spread in a day or so to the pillars of the fauces. Parts bled if touched. Another physician was called, as my prognosis was grave. On the eleventh day I saw the child playing in the street. No ulceration in the pharynx. On twelfth day, sudden death from paralysis of the heart, according to the account given by the family.

Johanna M., 2½ years. Brother of the patient had had a mild attack of scarlet fever eleven days previously. Patient had mild attack without marked pharyngitis. Fifth day tonsils much swollen. In a few days both tonsils and uvula were covered with membrane; lips and edges of nostrils ulcerated and bleeding. Thirteenth day, voice hoarse and almost inaudible; respiration somewhat embarrassed. Fifteenth day, death, without any preceding dyspnoea. Trace of albumen and a few casts in the urine.

Daniel S., 5 years. When first seen desquamation was going on; emaciation extreme; voice whining; ulceration of the edges of lips and nostrils; membrane on both tonsils and uvula; abscess below right ear that contained thin, bloody, foul-smelling pus. Treatment: locally, iodoform; internally, corrosive sublimate (gr. $\frac{1}{16}$ every hour), whisky and eggs. Perfect recovery.

Three cases occurred in one family by the name of O'Brien. Hygienic surroundings good.

September 14. Louisa, 11 years. Malaise; slight pharyngitis; rash, which lasted twenty-four hours. Second day, perfectly well. No sequelae. No desquamation.

September 14. Mary, 9 years. Eruption very full

and bright. Third day, membrane on uvula and pillar of the fauces; mucous membrane of lips ulcerating and bleeding. In the course of a few days, foul ulcer on right elbow, ulcer of genitals and perineum. Sixth day, right knee red, swollen and tender. Next day same symptoms in left knee and left wrist. The disappearance of the latter symptoms in two days, under the use of sodii salicylic made the diagnosis of rheumatism probable. Sudden death on tenth day.

James, 3 years, and Anne, 4 years. Both taken sick September 17. In both cases eruption intense; face much swollen, so that the eyes were partially closed; oedema of hands; urine contained a trace of albumen and a few casts. On third and fourth days respectively a membrane appeared on the tonsils and uvula. Both recovered completely.

The oedema in these cases was apparently due to the intensity of the eruption, as in neither case did the examination of the urine warrant the diagnosis of Bright's disease. Two other children that slept in the same room were not sick. It is an interesting fact that during the height of the disease the mother was confined, and convalesced without having any peuperal fever. She had no doctor or nurse.

SUMMARY.

Of these 50 cases, 4 died (1 in 12), all of diphtheria. These 4 cases are the only ones that died in my district, of scarlet fever, from April to January, the total number of cases being 88. This gives a mortality of 1 in 22.

It has been interesting to me, and very satisfactory, to find that I have not been called to a single case of scarlet fever in a family which I had attended previously for any other disease. Of course it was impossible for me to think of changing my clothes, or even disinfecting the hands, before attending other cases.

The new cases visited each month average in my district 200.

The eight and only cases of diphtheria all occurred in three weeks, and represented one third of the total number visited in the three weeks.

Treatment.—In mild cases, expectant. In cases with high fever, tepid sponge baths and antipyrin. In cases with diphtheria, brandy and tincture ferri chloridi.

THE MEDICO-LEGAL ASPECT OF POTT'S FRACTURE.

*Read before the Chicago Medico-Legal Society,
March 3, 1888.*

BY L. L. McARTHUR, M.D.,
OF CHICAGO.

In venturing to call your attention to so common a fracture, it has been rather with a desire of impressing, by repetition, what is already known, than to submit something new. To do so let me, as briefly as is consistent with clearness, present the subject by reviewing its surgical and anatomical aspects. Pott's fracture has been defined as a fracture of the fibula, combined with a fracture of tip of internal malleolus and laceration of internal lateral ligament,

presenting a characteristic deformity. It is *not* as many without reflection might think, a fracture of fibula simply.

First, recall the fact that astragalus is so mortised between the malleoli that (except in extreme flexion or extension) little or no lateral movement of that bone is possible.

Second, That the thinnest, weakest point of the fibula is about 2½ inches above its lower extremity.

Third, That one of the lateral ligaments of the ankle are torn in about all the fractures of the lower extremities of tibia or fibula from indirect violence and you have explanation for the location, causation and deformities existing with these fractures.

Pott's fracture is always the result of indirect violence, occasioned by a forcible turning outwards of the sole of the foot. The history would seem to be that fracture (from the great strain) of the tip of the internal malleolus occurs; the strain then falling suddenly upon the fibula that bone fractures also at its weakest point, leaving the deformity which characterizes the case in question. The diagnosis when crepitus at fibula, loss of tip of inner malleolus, and increased mobility are present is patent and easy.

But though the fibula be fractured *crepitus* can in many cases not be obtained because the smallness of the broken ends tends but little to hold them together and as they generally overlap none can be felt, hence the too frequent treating of such an injury as a "sprain," with its subsequent weeks or years of suffering. The poor function of that ankle, and a possible suit for malpractice. What then will be our best aids in arriving at a correct opinion?

First.—Remembering the fact that the astragalus is practically immovable laterally when half-way between flexion and extension, if we find the latter freely movable in such a position we may be pretty sure of our case. To do this best the palm of right hand should rest against the sole of foot, while the left grasps the leg just above the ankle, with the fingers tips and thumb of right hand grasping the astragalus (not as calcis and tarsus that are freely movable) one can try a lateral rocking movement, when if the bony supports on either side have given way the astragalus will move with it, otherwise not.

Secondly.—Since fracture of fibula can in but about half the cases be determined by crepitus, it is necessary to decide by some other means. Recalling the fact that the lower tip of the external malleolus extends below the line of the articulating surface with astragalus, we can see how direct inward pressure upon that tip will determine the case for us. For if it be not fracture it certainly cannot be budged, but if on the contrary there be a fracture above, the tip acts like the short arm of a lever, the fulcrum being at the articulating facet, and the long arm the lower end of shaft of the fibula; hence a decided teeter or rocking of the lower fragment can always be induced and be best perceived when the right thumb of the physician corresponds with the patient's right external malleolus, his left with the corresponding left of patient, while the finger-tips of the opposite hand rest upon that portion of the fibula about its articulating facet. By alternating pressure at these two

points, a fracture of fibula can *always* be determined though crepitus be absent.

Finally, to be sure that we have the true Pott's fracture to deal with, comparison of the tip of the internal malleolus is necessary.

Now the medico-legal aspect which cases of this nature may assume is dependent wholly upon the subsequent treatment, and since proper treatment can only then be applied when a correct diagnosis has been made by emphasizing the means of diagnosing this fracture can be the more readily pardoned for a fixed medico-legal aspect in any case can only exist when a positive diagnosis is possible. As to differential diagnoses we have to distinguish this from (1) laceration simply of the lateral ligaments (2) from simple fracture of the fibula (3) from simple fracture of internal malleolus.

Simple laceration of lateral ligaments is, according to authorities, comparatively rare. When the tips of both internal malleoli correspond in shape, when there is no rocking of the fibula at its lower end, nor but little of the astragalus when pressed firmly into the mortise made by tibia and fibula it is fair to conclude that the ligaments have been torn.

When both the tip of the internal malleolus is missing, rocking of astragalus and lower end of fibula is present a fairly sure diagnosis of Pott's fracture may be made (3) when with normal contour of internal malleolus tip, rocking of lower end of fibula over the fulcrum made by its articulating facet, and increased mobility of astragalus inwards is present a simple fracture of the fibula can be asserted to be present with reasonable confidence. Now, since nature shows us a bony mortise normally present in the ankle, if we do not restore in so far as lies in our power the same close apposition of the articulating surfaces when these have been disturbed a medico-legal, with accent on the *legal*, phase soon presents itself. To accomplish this best the treatment recommended by Velpeau is certainly the best either for fracture of fibula simple, Pott's fracture, or fracture of internal malleolus. This consists of a long internal splint padded to fit the inner aspect of the leg, and extending (here is the important feature) several inches below the foot. The sole of the foot is then made to face inwards against splint by bandaging, thus restoring 1, internal malleolar tip; 2, drawing upon fibula; 3, relaxing internal lateral ligament.

In conclusion let me reiterate,

1. That the astragalus will not rock laterally.
2. That the normal mortise be restored in so far as possible.
3. That diagnosis of fibular fracture must not be dependent upon crepitus.
4. That these chronic, long-lasting ankle sprains are most often accompanied by destruction of the normal mortise.
5. That with laceration of univascular ligament or tissue there is far less hæmorrhage and consequent ecchymosis.

DR. THOMAS KEITH, the distinguished surgeon of Edinburgh, will soon remove to London.

MEDICAL PROGRESS.

RADICAL CURE OF HYDROCELE BY EXCISION OF TUNICA VAGINALIS.—DR. W. W. KEEN reports a successful case, in the *Medical News* of April 7, 1888, and says:

Until recently various methods of injection, especially by iodine or carbolic acid, have been the chief and almost the only means employed in the treatment of hydrocele. They have the great advantage that but few deaths can be laid to the use of iodine, and none, I believe, to carbolic acid. But they have several disadvantages.

First, that of recurrence. In over eight per cent. of the cases treated by iodine, recurrence takes place, and this misfortune sometimes even occurs a second time. Carbolic acid has been much less widely used, but its promise as to freedom from recurrence is much better than iodine, and if injection be the method chosen, this would seem to be the preferable one.

Secondly. In a large number of cases additional lesions are found besides the hydrocele, lesions which in the majority of cases cannot be cured by any injection. In 123 cases reported by Juillard and Senzmer, cysts were found in 43, enlargement of the testicle and epididymis in 23, thickening of the tunica vaginalis in 54, false membranes in 26, and free or attached foreign bodies in 3.

Thirdly. There is generally great pain.

Fourthly. Not seldom severe inflammation and swelling, sometimes suppuration, and occasionally even gangrene of the scrotum occurs.

Fifthly. Even if no such untoward results occur there are great induration, weight, and tenderness in the scrotum, such that the patient is usually laid up for three weeks, and sometimes longer.

Three somewhat different methods of open antiseptic incision have been proposed as substitutes for injection, and especially with a view to a more permanent radical cure. Volkmann incises the sac, and after syringing it out with a three per cent. solution of carbolic acid, unites the edges of the tunica vaginalis to the skin, and, after drainage, dresses the wound with an antiseptic compressing gauze and bandage.

Juillard took a step further. After incision of the sac, and removal of all pathological products by the scissors or spoon from the sac, cord, or testicle, he then resects the superfluous tunic, leaving only enough to cover the cord and testis. The edges of the tunica vaginalis are then sutured with catgut and the external wound closed independently, drainage and antiseptic gauze completing the dressing.

Bergmann (reported by Bramann, *Berlin klin. Wochenschr.*, April 6, 1885, p. 209) went a step further, and proposed the total extirpation of the free part of the tunica vaginalis, only leaving that portion attached to the cord and testis. Of course, any other concomitant lesions are appropriately treated at the same time. Bramann reports twenty cases, with rapid cure in eleven days, without fever or suppuration. Bull has reported two cases (hydrocele

of the cord) thus operated on, one of which had been twice injected with carbolic acid, and the other once with iodine. Both rapidly recovered. Southam (*Lancet*, September 10, 1887) reports four cases, one of which had recurred after carbolic acid injection, cured with an equally speedy and happy result.

To these twenty-six cases I add but one, but it is an excellent illustration of the slight reaction following the operation, and of the quickness of the cure.

It would seem, *first*, to be almost an impossibility that recurrence should take place, for practically none of the sac is left, and in so far it would be *a priori* the ideal radical operation.

Secondly. This method facilitates the proper treatment of any additional lesion above described as not uncommon.

Thirdly. As is usual after antiseptic wounds, there was little or no pain.

Fourthly. As again is the rule in wounds so treated, there was little inflammation practically no fever, not a drop of pus, and no seeming possibility of gangrene.

Fifthly. There were only moderate induration, weight, and tenderness, so that the patient was up and about on the seventh day, and was ready for discharge on the eleventh day entirely cured and comfortable.

Sixthly. Although a more radical operation than that of Volkmann, it is less painful and less dangerous. In 254 cases collected by the writer, recurrence is noted in three, and two died of septicæmia and pyæmia, while abscess, sloughing, and orchitis have all occurred. Induration, weight, and tenderness have persisted from three to four weeks. The conditions after resection of the entire tunica vaginalis and immediate closure of the wound, with drainage, and antiseptic dressing, are such as to favor the speediest and safest recovery, without any of the dangers above noted as following antiseptic incision.

The case is also a good illustration of "the conditions conducive to the *earliest possible* healing of operation wounds," to which I have called attention in a paper with the above title, read before the Surgical Section of the New York Academy of Medicine (*Medical Record*, January 28, 1888), especially the method of drainage by horsehair instead of rubber, glass, or bone tubing, as is suited best to so small a wound, and the change of dressing on the day after the operation, recovery being complete in seven days.

HOW TO PRESCRIBE DIGITALIS.—In an article on this subject HENRI HUCHARD gives the indications for digitalis in a number of affections, among which may be mentioned:

1. *Cardiac Hypertrophy of Puberty and the Menopause.*—At the age of puberty, he thinks, the cardiac hypertrophy is consecutive to exaggerated arterial tension, and it is this that must be combatted. He attributes the cardiac hypertrophy at the menopause to arterio-sclerosis, so that the cardiac hypertrophy at these two periods of life have practically the same pathogenesis: both are consecutive to increased arterial tension. In these cases digitalis should be prescribed as a sedative in small doses; and always giv-

ing preference to depressors of arterial tension and to cardiac sedatives, such as the iodides, nitroglycerine, and preparations of aconite and arsenic.

2. *Nephritis and Asystolism of Renal Origin.*—In chronic parenchymatous nephritis digitalis should be prescribed with reserve, and the same may be said of all active substances that may be retained in the organism and cause intoxication by reason of faulty renal elimination. But as digitalis is not eliminated naturally by the kidneys, albuminuria is not an absolute contraindication to its employment. In the course and at the beginning of interstitial nephritis the arterial tension is considerably increased, and there is cardiac hypertrophy often associated with myocardial sclerosis, and diuresis is normal and often very abundant. In these cases digitalis should not be prescribed, but arterial depressors, such as the iodides and nitroglycerine, should be given. But afterwards there comes a period—in parenchymatous, and especially nephritis—when the heart fails, or its contractions become feeble, or visceral congestions and peripheral œdemas cause lowered arterial and increased venous tension, and the kidneys are inactive. The albuminuric patient has now entered the cardiac stage, and is to be treated as a cardiac patient for asystolism. Such simple diuretics as milk, squills, and nitrate of potash are insufficient, and preference must be given to the cardiac-vascular diuretics, among which digitalis occupies the first place. In such cases "the conservation of the circulatory equilibrium and of the forces of the heart should be the object of the physician's constant attention," as Lecorché and Talamon say in their recent excellent work "Traité de l'Albuminurie et du Mal de Bright." They add, with reason, that cardiac tonics should not be reserved exclusively for advanced stages of Bright's disease, and they advise them at the time of the acute growth of the affection, when the heart tends to be enfeebled by the obstacle created by the renal affection. "We have obtained," they say, "remarkable results from digitalis given from the beginning of acute Bright's disease, the patient being at the same time subjected to an energetic antiphlogistic treatment. The combination of the two methods, the diuretic and the antiphlogistic, seems to us to be the best means, in cases of this kind, to combat inflammatory renal congestion and asthenic dilatation of the heart, and of preventing the necessary consequences, general anasarca and uræmic toxæmia."

In these cases, also, as in all cases of asystolism of renal origin, another cardiac-vascular diuretic, caffeine, must be used, and this sometimes acts with a promptitude superior to digitalis, has no cumulative effects, and is eliminated more rapidly and more surely. The pure caffeine may be given, as by the following formula:

Distilled water 300 grams.
Benzoate of soda.
Caffeine R^2 5 grams.

R^2 Take 4 to 6 tablespoonfuls a day.

3. *Digitalis in Aneurisms of the Aorta.*—Most authors hold that digitalis gives very good results in aortic aneurism, that it calms palpitations, diminishes

dyspnoea, and is indicated as an agent having a sedative effect on the circulation. Lutton even says that it moderates the blood impulse in the arteries. But the effect is just the opposite, for digitalis increases the blood wave through the aorta, and raises the arterial tension, already heightened by the aneurism.

Bouillaud has rendered great service to medicine by first indicating good effects obtained in aortic aneurisms by the use of the iodides. These have not only a modifying action on the arterial walls, but also, and especially, as depressors of the vascular tension. Huchard uses iodide of sodium, which is just as active as the potassium salt, is better supported by the stomach, is more assimilable, and does not as the potassium salt, cause toxic effects on the heart and general system, by means of the renal insufficiency to which all patients suffering from arterial affections are exposed. Huchard uses the following formula.

Distilled water.....	300 grams.
Iodide of sodium.....	20 "
Ext. thebaïc.....	0.05 centig.

Take from 2 to 4, or even 5 tablespoonfuls a day before eating in a little beer (to mask the taste). Continue this during 20 or 25 days every month.

It is for the same vaso-dilating action that he gives nitroglycerine:

Distilled water.....	300 grams.
Alcohol solution (1:100) nitroglycerine	30 gtt.

Take from 3 to 6 tablespoonfuls a day. Or give the 1:100 alcoholic solution of nitroglycerine, 6, 15, or 20 gtt. a day in 2 gtt. doses. The dose must be diminished or suspended when the medicine causes headache.

The principal indication in aortic aneurism is to reduce the mass of blood. The principles of treatment announced by Albertini and Vasalva, Kirby, Beatty and Stokes, show that digitalis must be given very cautiously, and in small doses, if we wish to obtain only a sedative effect. Preference should be given to doses of 10 to 20 gtt. of the tincture, or 5 to 10 centig. of the infusion, and Huchard recommends that it be given in slightly increasing doses, since if the effect be got suddenly rupture of the aneurismal sac may be caused.

But later, when the arterial lesion is propagated to the coronary arteries, and the cardiac muscle is more or less altered, the malady is no longer simply aortic, but is now mitral. Then digitalis is indicated in large and decreasing doses, to relieve the failing action of the heart muscle, and to combat imminent asystolism.—*Revue Gén. de Clin. et de Thérap.*, March 29, 1888.

THE TREATMENT OF ACNE.—When UNNA takes up even an old theme we expect him to treat it in a new way, nor are we disappointed in the paper now before us ("Monatshft. f. p. Dermat.," 1888, No. 1). He divides acne into two clinical divisions: 1. The process of closing of the follicle and formation of the comedo. 2. The process of suppuration of the follicle. Comedones are to him only the evidence of the abnormally close coherence of the corneous layer or the skin in the parts supplied with lanugo hairs. The corneous layer becomes thickened and closes

the mouth of the follicle. The comedo forms on account of the continuance of the parakeratosis on the inside of the follicle. Suppuration only succeeds to the comedo formation in those follicles which contained *Staphylococcus aureus et albus* before they became closed, or into which they have entered on account of some subsequent irritation, as from tar, chrysarobin, or the like, permitting their breaking through the walls of the glands. The indications to be met in the treatment of acne are two. 1. The loosening of the corneous layer of the skin. 2. The killing of the *staphylococcus*. We can fulfill the first indication in practical practice by the use of green soap, acetic acid, a 5 per cent. caustic potash solution, and salicylic-acid plaster. In private practice these are too rough procedures, and it is better to use sulphur with carbolic acid, or resorcin with corrosive sublimate. Two or three times a week it is well to scrape off the whole diseased parts with the curette, open all the pustules, and squeeze out all comedones. The patients should wash with warm water and soap, and follow this, if their skins are tender, with a powder of oxide of zinc and flour. During the night the medicament is best applied in a paste; during the day in a watery or spirituous solution, two or three times daily after washing. Thus at night we might prescribe:

R Benzoinated zinc ointment.....	86 parts.
Precipitated sulphur.....	10 "
Siliceous earth.....	4 "

And by day:

R Resorcin.....	2 to 5 parts.
Glycerin.....	1 part.
Orange-flower water.....	20 parts.
Alcohol.....	So "

Or by night:

R Benzoinated zinc ointment ...	So parts.
Resorcin.....	10 "
Siliceous earth.....	10 "

And by day:

R Corrosive sublimate.....	0.05 to 0.2 part.
Glycerin.....	1 "
Orange flower water.....	20 parts.
Alcohol.....	So "

After the acne is pretty well overcome by these means, it is well for some time to use a resorcin paste, or a resorcin-sublimate-spirituous solution, or simply sublimate soap.—*N. Y. Med. Jour.*, April 21, 1888.

HYPODERMATICS OF ARSENIC IN CHOREA.—Make a mixture of equal parts of Fowler's solution and distilled water. Begin by injecting one drop into the subcutaneous cellular tissue, and increase the quantity one drop a day until eight or ten drops are being injected, when the quantity is reduced one drop a day. If necessary repeat.—*Gazette Med. de Montreal*, January, 1888.

CORNUTIN.—LEONIDAS LEWITZSKI (*Inaug. Diss.*, St. Petersburg, 1887) after a number of experiments, concludes that Kobart's cornutin is one of the most certain means (when administered by the mouth) of causing contractions of both the pregnant and non-pregnant human uterus, and is especially useful in hæmorrhage after abortion, and in menorrhagia from chronic metritis.—*Centralbl. für Gynäk.* No. 8, 1888.

THE

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MAY 5, 1888.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.

The first two, and perhaps three, volumes of the Transactions, will be ready for issue at the Cincinnati meeting of the American Medical Association, to such members of the Congress as shall notify the Chairman of the local Committee of Arrangements, Dr. W. W. Dawson, of their desire to receive them at that time and place. To insure delivery notice must be immediately given.

JOHN B. HAMILTON,

Late Secretary-General.

PUERPERAL MASTITIS.

Not the least significant outgrowth of the Semmelweis doctrine of puerperal fever is presented in modern views as to the causation and prevention of puerperal mastitis. Olshausen¹ has given at a recent date an uncommonly clear and concise summary of the more important facts in connection with this subject. In the following note, free use is made of this essay, not only on account of its authoritative source, but also because it is adequately representative of the state of our present knowledge.

Every case of puerperal mastitis is due to infection. Now, it is necessary to distinguish between the physiological turgescence of the mamma and

parenchymatous inflammation. The former occurs usually on the second or third day of the puerperium, and is characterized by symmetrical enlargement and rotundity of the organs, while the latter commences during the second or third week—seldom earlier than the sixth day—and begins in a circumscribed spot. This proposition shuts out at once from consideration the operation of such agents as retention or impeded flow of milk, exposure to cold, mental disturbance and the like, as primary factors. We are all of us familiar with the important role formerly assigned these agents in the etiology of mammary abscess. Indeed, traces enough of this erroneous and pernicious belief may still be found in many of our best text-books. Investigation proves that infection may occur through two channels: through the lumina of the milk ducts and through abrasions, cracks or fissures of the nipple. Experience and clinical observation teach that the former is the more frequent mode of infection. Escherich and Bummi have demonstrated the presence of pathogenous bacteria in the milk before any inflammation of the gland was noticeable. The invasion consists, as a rule, of staphylococcus. Cohn found a peculiar streptococcus in cases of non-suppurative, parenchymatous mastitis. When the infection takes place directly through nipple lesion, the *materia peccans* gains access to the connective tissue spaces and phlegmonous mastitis is the typical result. Streptococcus pyogenes is the potent microorganism under these conditions.

While retention or impeded flow of milk is not a primary etiological factor, either certainly may play an important adjuvant part. Under the influence of the bacteria, the secretion is decomposed, loses its alkaline reaction, and free acids—lactic and butyric—are developed. Galactostasis favors in this manner the settlement of bacteria.

Kucher aptly says: "The chapter on prevention is the crowning glory of Semmelweis' theory," and so it is in the case of the modern doctrine of puerperal mastitis. Prophylactic measures are simple, intelligible and entirely efficient.

The nipples must be carefully cleansed every day during the latter weeks of pregnancy with some antiseptic fluid, such as a saturated solution of boracic acid or alcohol, and then they must be protected from contact with the clothing by sterilized gauze.

During lactation, they must be similarly cleansed and protected after each nursing. The child's mouth must also be kept perfectly clean. Lesions of the nipple, which the preliminary treatment during pregnancy will largely prevent, must be observed

¹Deutsche Medicinische Wochenschrift, No. 14, 1888. Schroeder's Lehrbuch der Geburtshilfe, 10. Auflage von Olshausen und J. Veit.

as soon as they appear. They demand at once strict antiseptic treatment.

The same absolutely antiseptic condition of the fingers of the attendant is requisite when the nipples are handled, as when any operation in connection with genito-urinary apparatus of the puerperal woman is undertaken. Much the same responsibility attaches to the physician and the nurse with reference to mammary abscess, as in the case of puerperal fever. That is the physician and the nurse, provided the care of the patient has been completely in their hands, are responsible theoretically for the unfortunate accident. Either they have neglected to institute the precautions, plainly indicated, or they have themselves infected nipples. This is not at all a pleasant doctrine for the practitioner, but is a very wholesome one for the patient.

When mastitis actually begins, the child must be removed from the affected breast immediately, and not at a time when the inflammation has already attained considerable proportions. "When this precaution is neglected," writes Olshausen, "or when it is not observed within the first twenty-four hours after the chill, which almost always characterizes the beginning of the disease, suppuration almost always follows. If the child is at once removed from the affected breast, in three-fourths, or more, of the cases, the mastitis will be cut short." In addition to the cessation of functional activity, the breast ought to be suspended, an ice-bag applied, and a purgative exhibited.

Olshausen has observed that when the fever continues longer than thirty-six hours, suppuration almost invariably results. This limit seems to us too brief, as certain cases of undoubted parenchymatous mastitis have come under our observation, in which resolutions have occurred even when the fever lasted as long as forty-eight or even seventy-two hours.

w. w. j.

TWO NEW TEREBINTHINATES.

The revival of interest in the terebinthins of late has resulted in the extensive use of terebine in bronchial affections. DR. PROSSER JAMES has recently called attention, in the *Lancet*, March 10, 1888, to two other allied products, and more particularly to their use in diseases of the respiratory mucous tract. These are the essential oil of the mountain pine, and hydrate of terpin.

The *Mountain Pine*, *Mugho*, or *Pinus pumilio* of Lambert, is the tree from which exudes the Hungarian balsam, once so highly prized. By distilling the

young branches with water a volatile oil is obtained, which has been known for a long time as "oleum templinum" or "Krummolzöl," and is the most potent agent in the so-called "pine-cure" of Reichenhall and other German spas. As the vapor of the water escapes into the inhalation rooms it is medicated with the volatile oil. By an improved process and apparatus, and care in selecting the material, a much finer product is now obtained—a very pure essential oil, oleum pini pumilionis, which has been imported into England under the name *pumiline*. It has the odor of the most fragrant variety of the pine, and is less irritating than other fir oils. When sprinkled or sprayed about a sick-room, says Dr. James, it imparts a lasting and grateful fragrance to the air, which is not oppressive, and seems to be disinfectant; or it may be thrown into a little warm water and allowed to evaporate; or it may be diffused by a steam inhaler, or a hand-ball atomizer.

This oil can be taken internally, and is admirable for inhalation. When prolonged inhalation is desired a few drops may be put in a suitable respirator, and patients frequently prefer it to other inhalants. For short steam inhalations from 10 to 20 drops may be put into any common inhaler half full of water at 150° to 160° F., and the vapor inhaled; but it is better to diffuse the oil through water by magnesia, powdered silex, or prepared talc in the proportion of 40 to 60 minims of oil to 20 grains of magnesia and 1 ounce of water. One teaspoonful of this mixture added to 8 ounces of cold water is stirred in the inhaler, and when 8 ounces of boiling water are added a convenient temperature is obtained; as it cools a little more boiling water is added, if it be desired to prolong the inhalation. This is milder than the B. P. vapor olei pini sylvestris, and may be used when that is too irritating. "It is a very mild stimulant to the mucous membrane, and an agreeable remedy for inhalation in relaxation, congestion and chronic catarrhal affections of the respiratory tract. Oleum pini pumilionis is also an excellent addition to other inhalations, such as creasote and various essential oils. It disguises the disagreeable odor of some and imparts its own fragrance to others." Dr. James has used it to disguise the smell of iodoform, but the mixture should be freshly prepared, as after a few days decomposition takes place with the liberation of free iodine. The oil mixes well with eucalyptol and other inhalants.

For internal use the dose of the oleum pini pumilionis is from 1 to 5 minims, and small doses may be taken in lozenges or on a lump of sugar, just as terebine is often taken, or a tragacanth mixture may be

made, or larger doses may be given in capsules. When taken internally the drug acts as a carminative. It is easily and quickly absorbed, and in the blood and tissues probably behaves like other terebinthines. "It is its action on the bronchial membrane during excretion that renders it valuable in disease of this surface, being a stimulant, expectorant, and disinfectant, hence indicated in chronic bronchitis, dilatation of bronchi, bronchorrhœa, some states of phthisis, and other affections. The effect on the kidneys, however, should not be forgotten. The violet odor of the urine is produced as with some other terebinthines, and small doses seem diuretic, but its use in diseases of the urinary passages manifestly requires care." It may be used *externally* sprinkled on lannel, or on spongio-piline. It is said to be a cleanly, prompt, and useful stimulant and counter-irritant, and sometimes appears to have slight anæsthetic properties.

The second terebinthinate, *terpin hydrate*, is very different from the oleum pini pumilionis. It has no odor, but little taste, is rather insoluble, and is solid. When crystallized spontaneously from a mixture of turpentine and water it appears as small needles, or it may be obtained in large rhombic crystals by allowing 3 parts of alcohol, 4 of turpentine, and 1 of nitric acid to stand in shallow dishes for 3 or 4 days. It is only sparingly soluble in cold water or turpentine, but more soluble in hot-water, alcohol and ether; on account of its slight solubility it is best given in pill or wafer. It may be dissolved in warm glycerin, and then an equal quantity of some syrup may be added, which makes a suitable linctus. From 16 to 24 grains to 1 ounce gives 2 to 3 grains to the teaspoon-full, a dose that can be taken every 3 or 4 hours. Small doses, such as the above, should be used at first, since they are often sufficient for the bronchial affection, and may affect the kidneys, for large doses given to animals have caused hæmaturia. The effects of terpin hydrate are similar to those of other terebinthines, and it is useful sometimes as a substitute for them on account of being tasteless and odorless.

It restrains the cough and secretion of bronchitis, stimulating the bronchial membrane to healthier action, and Germain Sée has found full doses restrain the copious sputa of some cases of phthisis, and had no case of gastric disturbance after long use of the drug, though others have been less fortunate. In some cases small doses seem to increase the bronchial secretion. It has been used successfully in hæmoptysis, and in some cases it is mildly diuretic. Its alleged hypnotic property is probably due to the rapid relief to the cough.

W. G. E.

RELATION OF SCROFULOUS GLAND DISEASE TO OTHER FORMS OF TUBERCULOSIS.

MR. FREDERICK S. EVE has recently published a series of experiments (in the *British Medical Journal*, of April 14, 1888) undertaken for the purpose of determining the relation of scrofulous gland disease to other forms of tuberculosis. It will be remembered that some experiments by M. S. Arloing appeared to prove that inoculation with material from scrofulous glands was innocuous to rabbits, while it produced general tuberculosis in guinea pigs. From his experiments he inferred that either scrofula and tuberculosis were nearly allied affections, but caused by different agents, or they were derived from a single virus, of which the activity was modified in the scrofulous form.

Mr. Eve's experiments were made with small fragments of the glands prepared with sterilized instruments, "and the possibility of infection of the animals with true tuberculosis was negated by the precautions taken." In his experiments the inoculations uniformly caused tuberculosis. While he shows that the virus of strumous gland disease produces visceral tuberculosis in rabbits as well as in guinea-pigs, he admits that the disease in rabbits is not so acute and rapidly fatal as that following inoculation with acute miliary tubercle. "The difference is one of degree, not of a kind permitting us to infer, with Arloing, that struma is a specialized form of the tuberculous virus. We must therefore fall back on another explanation of the clinically innocent course of strumous gland disease; and we find it probably in the locality or soil in which the virus is implanted. Taking cervical gland disease, if the virus is not inherited from a consumptive or strumous parent, it may be surmised that the common bacillus of phthisis is implanted in the lymph follicles of the pharynx or tonsils, in one of the adjoining mucous membranes on the skin, and is carried direct to the glands. These, acting as filters, arrest its progress permanently, except in some cases in which suppuration and ulceration take place, when the surrounding textures may become implicated, and general dissemination ensue. The malignancy of the virus may be somewhat attenuated under the local influence of the lymph-cells and leucocytes in the gland, but to admit that the virus producing the disease is *ab initio* specialized, would be to infer that the strumous disease could only be produced by the virus of struma, and no other." Mr. Eve emphasizes the objections to the terms "scrofula" and "struma" for lesions resembling tuberculosis. The evidence that tends to connect strumous gland disease more

closely with general tuberculous affections should encourage the practice of early operation, whenever possible, with the view of completely eradicating the disease.

W. G. E.

THE MONUMENT FUND IN HONOR OF DR. BENJAMIN RUSH.

Two years since the American Medical Association adopted resolutions in favor of having a suitable monument erected in Washington to the memory of Dr. Benjamin Rush, of Philadelphia, who died in 1813. Preëminent as a physician, a medical teacher and writer, a tried patriot and statesman, actively participating in the struggle that gave birth to the Nation and one of the distinguished signers of the Declaration of Independence of 1776, and an example of the purity of private and social life; no other name could have been chosen that would so appropriately represent the medical profession on an enduring monument among the many that adorn the parks and lawns of our National capital.

A Committee was appointed to receive subscriptions for the purpose in sums of one dollar and upwards, from members of the profession in every part of the country. It was ascertained that the contribution of the small sum of \$1 by each active practitioner of medicine in the United States would aggregate a sum amply sufficient for the purpose intended; and it was thought that very few members of the profession would hesitate an hour before sending their mite after the way had been prepared for them to do so. Dr. A. L. Gihon, U. S. N., was made Chairman of the Committee; Dr. G. H. Rohé, of Baltimore, Secretary; and Dr. J. M. Toner, of Washington, Treasurer.

The report of the Treasurer at the last annual meeting of the American Medical Association showed only a fair beginning in the receipt of contributions, and we have received intimations recently that much less progress has been made since that meeting than the Committee had reason to expect. This is not so much from reluctance to give the \$1, as it is neglect to enclose the amount in a note and mail it to the address of the Treasurer of the Committee or to any one of the sub-treasurers appointed in the several States. This is illustrated by what recently took place at the annual meeting of the California State Medical Society when, after Dr. Gihon had briefly directed the attention of the Society to the subject, every member present, numbering 106, cheerfully contributed his \$1 at once. If the subject was properly presented at any regular meeting, with some one present authorized to receive the money, an equally

ready response would be obtained in every regular medical Society in the country. We earnestly invite the immediate attention, not only of the members of organized medical societies, but of every member of the profession, and ask them to contribute their mite to so worthy an object without delay.

EDITORIAL NOTES.

LECTURES ON INEBRIETY.—Dr. T. D. Crothers, of Hartford, Conn., is to deliver a course of lectures on "Inebriety as a Disease and its Medical Jurisprudence," before the medical students of the University of Vermont at Burlington, May 21, 22 and 23, 1888. This is the second course of lectures on this important subject delivered to medical classes in this country, and indicates progress in the right direction.

UNIQUE REMOVAL OF THE UTERUS.—Dr. B. B. BROWNE, of Baltimore, applied a saturated solution of chloride of zinc to a cancerous uterus by means of a tampon which was held in place by absorbent cotton. Below the cotton he placed a second tampon which was saturated with bicarb. soda and glycerin. On the seventh day the tampons were removed, and on the tenth day the uterus in its entirety sloughed and came away. The specimen was exhibited before the Clinical Society of Maryland.

DR. D. HAYES AGNEW'S FIFTIETH ANNIVERSARY.—On the occasion of Dr. Agnew's fiftieth anniversary in the profession recently a reception was given him by a number of professional men in Philadelphia. On April 23 the alumni and students of the Medical Department of the University of Pennsylvania gave him a reception. At the coming Commencement of the University of Pennsylvania its highest academic honors will be conferred upon the distinguished surgeon and teacher.

DEATH OF DR. J. FORD PRIOLEAU.—Dr. J. Ford Prioleau, of Charleston, S. C., died at the residence of his son in Beaufort, on Wednesday, April 11, aged 62. He was born in Charleston, and was graduated from the Medical College of the State of South Carolina in 1847. Since 1871 he has been Professor of Obstetrics, and since 1881 Dean of this College. He was a member of the American Medical Association.

THE INDEX MEDICUS.—The generous publisher of this most valuable periodical has sent out a circular stating that the *Index* is not self-supporting. It is not too much to ask that every medical society in the country will subscribe for at least one copy. It is

unquestionably the most valuable medical periodical published in the world, and is indispensable to a literary worker.

PORRO OPERATION IN QUEENSLAND.—MR. H. C. GARDE, Surgeon to the Maryborough Hospital, Queensland, reports, in the *Australian Medical Gazette*, March, 1888, a successful Porro operation for rachitic pelvis, 1.5 inch antero-posterior diameter, on a woman 23 years old, primipara. The stump was treated in the abdominal wound. The child, a son, survived.

THE ITALIAN SOCIETY OF HYGIENE will hold its second congress in Brescia, on September 1, 2, and 3, 1888. There will be an exhibition of publications on hygienic and allied subjects, of hygienic instruments, apparatus, and appliance, and of chemical and pharmaceutical products related to hygiene.

DR. HERMANN KRAUSE, Privat-docent in the University of Berlin, who has been in attendance on the Emperor of Germany, has been made Professor of Laryngology.

THE ROCKY MOUNTAIN MEDICAL ASSOCIATION will hold its annual meeting on Wednesday evening, May 9, in the parlor of the Burnett House, Cincinnati, at 8 o'clock.

DR. AUGUST VON ROTHMUND, Professor of Ophthalmology in the University of Munich, celebrated his 25th anniversary as a teacher on March 20.

AN INTERNATIONAL EXPOSITION OF HYGIENE and Life Saving and Preserving Apparatus will be opened in Ostend on June 3.

DEATHS OF FOREIGN MEDICAL MEN.—**DR. ROBERT DE LATOUR**, of St. Cloud, on April 4, aged 86. **Dr. Nikolai Ritter**, of St. Petersburg.

ASSOCIATION ITEMS.

THIRTY-NINTH ANNUAL MEETING.

To be held in Cincinnati, Ohio, May 8, 9, 10 and 11, 1888.

PRESIDENT, A. Y. P. GARNETT, M.D.,
of Washington, D.C.

PAPERS AND DISCUSSIONS.

The following additional titles of papers to be read at the approaching meeting have been received since the programme was published in the issues of *THE JOURNAL* for April 7, 14, 21 and 28:

Section on Dermatology and Syphilography.

"The Galvanic Current as a means of Inducing the Penetration of Parasiticide Remedies to the In-accessible Parts, as Hair Follicles, etc.;" "Report of an Unusual Case of Nervous Pigmentosus, with Illustration;" "Report of a Case of Tinea Favosa of the Forearm, with Illustration," by Henry J. Reynolds, Chicago.

Section on Surgery and Anatomy.

"A New Method of Treatment of Diseases of the Urethra Bladder, Uterus, and Rectum, Dry Medication, Dry Syringe. Illustrated." By Elmer Lee, St. Louis.

Railway Arrangements.

MONON ROUTE.—Those unable to go by the special train of the Monon Route on Monday night may go on any day train on Saturday, Sunday, or Tuesday. See advertisement on page 8.

PAN HANDLE ROUTE.—Attention is called to the advertisement of the Pan Handle Route on page 9 of this issue of *THE JOURNAL*. The Pan Handle is the pioneer through car line to Cincinnati, and is a portion of the Pennsylvania lines west of Pittsburgh, which should be a sufficient guarantee that any one patronizing the Pan Handle will have a pleasant and comfortable trip to Cincinnati.

THE KANKAKEE LINE.—This popular and direct line has made arrangements to run trains for the meeting of the Association at Cincinnati. The times of departure and arrival are as follows: Leave Chicago 9.10 A.M., arrive at Cincinnati 7.15 P.M.; leave Chicago at 8 P.M., arrive at Cincinnati 7.30 A.M. Parlor cars on day trains, Pullman Sleepers and Reclining Chairs on night trains. This is the only line from Chicago entering the Grand Central Depot at Cincinnati, which is situated in the heart of the city, and in the immediate vicinity of the hotels and business centre. Rates of fare same as on other lines. For further information call at city ticket office, 121 Randolph Street, Chicago, or address J. C. Tucker, General N. W. Pass. Agent.

SOCIETY PROCEEDINGS.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

*Ninetieth Annual Session, held at Baltimore,
April 24, 25 and 26, 1888.*

TUESDAY, APRIL 24—FIRST DAY.

The Medical and Chirurgical Faculty of Maryland convened for its ninetieth annual session in the hall of the Faculty, Tuesday, April 24th, at 12.30 P.M., the President, DR. I. E. ATKINSON, in the Chair, and Drs. G. L. Taneyhill and Robert T. Wilson, Secretaries.

The *President's Address* was then made, on the subject of

MEDICAL CHARITIES.

He began by speaking of the evil effects of indig-

criminate alms-giving and poor relief, and its tendency to pauperize the recipients. Much of such charity does a small fraction of good, but intensifies the very evils that it is intended to arrest. Fortunately there are many with wealth, kindness of heart, clearness of brain, and energy of hand, who realize that the bestowal of alms is not always true charity, that assistance to the unworthy may prove unjust to the deserving and meritorious to the recipient. A large class also does good by distributing the bounty of others. The outcome of all such united efforts at systematic charity resulted in the formation, in several cities, of Charity Organization Societies. They have done immense benefit to the deserving poor. It may be profitable to consider the administration of medical charity—a subject worthy of attention, and not trite. Generally those who stand most in need of assistance are those whose misfortunes are the more or less imminent results of their own actions. Two classes receive charitable relief: (1) Those who from disease, age or infirmity are made to work for a livelihood; and (2) those who, suffering from neither of the disabling causes mentioned, live in idleness. All in the first class need help, and not all in the second class should be excluded. Able-bodied paupers exist now since the days of strikes. The well and healthy laborer may find, as a result of his toil, enough compensation to supply his daily wants, but when sickness appears he appeals to charity for support. In 1872 London, with four million inhabitants, treated gratuitously at the various hospitals and dispensaries about 1,100,000 sick; 58,382 as in-patients, and 1,083,674 as out-patients, and in this year £994,388 were contributed to this object; that is three persons in every ten of London received medical charity in 1872. The stress of work on the medical attendant in these dispensaries is so great that in one hospital (St. Bartholomew's) dispensary 120 patients were seen and dismissed in 70 minutes; that is 35 seconds for each patient. Pauperism often begins in this way. Patients able to pay are daily seen in our dispensaries and hospitals. The competition of medical schools for clinical material, and the desire of medical men for clinical experience, encourages pauperism. The "Provident Dispensary Plan," started by Smith, of Southam, England, in 1837, has not been the success it should be. In 1874 there were only 11 such dispensaries in London. The B. & O. R. R. Relief Association is a good example of an excellent organization for medical relief. In all such institutions membership must be compulsory. The American laborer and poor man is less willing to go to hospital in this country than in England. Our hospital arrangements are defective and their equipment and management inadequate. In New York there are 3502 public free beds, and 1418 private free beds, while in Baltimore there are only 868 free beds, of which 365 are in the almshouse. Organized charity would soon weed out the undeserving cases, and the saving would more than compensate for the expense of investigation by paid officers of the society. District nursing would largely increase the amount of good which the medical man does.

Even the Johns Hopkins Hospital, with 120 free beds, cannot fulfill all the requirements of this community. We should work toward the perfection of our medical charity, and strive for improvement in the future.

DR. CHRISTOPHER JOHNSTON, SR., as Chairman of the Section on Surgery, then read a paper on

TETANUS AND ERYSIPELAS.

The great cavities of the body are boldly visited by the surgeon both for cure and diagnosis. Laparotomy has passed through many different stages, and Sanger's operation is now performed at the right time with good results. Two young surgeons in the city have recently done it. Diagnosis, pathology, and the means of cure march hand in hand. Brain surgery is enlightened through the discoveries of physiology and pathology. Tetanus and erysipelas are described both as idiopathic and traumatic. Most writers believe now that the disease cannot originate *de novo*. Cold and damp seem to have much to do with the causation of tetanus, but a causative injury cannot always be found. Gross says it is a peculiar affection of the nerves. The dualists believe in the two forms, and the unicist in the single form of tetanus. Nicolaier and Flügge believe in the bacillus of tetanus as a cause, but think that other agencies, such as damp and cold, help. Verneuil is a dualist. Certain localities seem to favor it. There is a tetanic district near Baltimore, and one on Long Island. Experiments made with the soil of these districts have not been convincing. It is infectious, and may be conveyed from man to rabbit, and from rabbit to rabbit. Some veterinary surgeons have had a succession of cases after operation for castration, and this was evidently due to infected instruments, which can retain the *materies morbi* for a long time. Those who have much to do with horses seem to be more exposed than others. Rosenbach also discovered a microbe, and Brieger several ptomaines called *toxines*. In erysipelas there is little doubt as to its causation by a microbe. Fehleisen has done the best work here.

DR. ROBERT W. JOHNSON made a supplementary report on

THE TREATMENT OF THE SAC IN HERNIA.

After dwelling on the danger of hernia and its important place in surgery, he gave a short historical sketch of the early manner of operation. Some think that if a truss can be comfortably worn in non-strangulated hernia, an operation is not justifiable. He thought there were times when an operation should be performed to cause a radical cure, for, as in the case of a sailor at sea, a broken truss would give much pain and do immense harm. The three kinds of cases are:

1. Those under easy control of the truss.
2. Those not so.
3. Strangulated cases, about the contents of whose sacs there is doubt.

If a truss be worn it should be fitted carefully by the physician.

DR. J. EDWIN MICHAEL called attention to the importance of making the operation radical, and the

fact that there was not so much risk of an operation for non-strangulated hernia if done carefully. The patient should be instructed before of this risk. He used silver sutures, and did not find that they cut the tissue.

DR. J. W. CHAMBERS had done three such operations of late, and had little rise of temperature in one case. He used catgut.

WEDNESDAY, APRIL 25—SECOND DAY.

The *Annual Address* was then delivered by DR. RICHARD GUNDRY, Superintendent of the Maryland Hospital for the Insane. He announced as his subject,

SOME PROBLEMS IN MENTAL ACTION.

In a scholarly and chaste address he traced the various causes of insanity. There are three causes to which it is referable, inheritance, environment and personality. Each of these influences was considered at some length. As methods of prophylaxis and treatment he urged the importance of manual training as a means of mental diversion and training. Those predisposed to insanity, he asserted, should early be taught the lesson of self-control. The inhibitory power of physical exercise may be seen in various ways. A noisy, blasphemous boy was quiet all the week while at work, was noisy on Sunday until made to work on that day when he became quiet. The inebriate, the vicious can all be reclaimed by methods of substitution provided they themselves seize the idea and do not let it slip away.

Character may be largely formed by circumstances but our own desires have much to do with shaping these circumstances.

DR. P. C. WILLIAMS, Chairman of the SECTION ON PRACTICE OF MEDICINE made the following report. He called attention of the Faculty to several important points.

1. We should recognize the meeting of the International Medical Congress held at Washington last year as and event in the medical history of the world and of our country.

2. Several clinical points are of great interest.

a. The peculiar epidemic of measles in Baltimore this year. It was widespread, severe, showed unusual nervous symptoms, and unusually high temperature at a late period of the disease with no inflammatory trouble in the lungs and few cases of secondary pneumonia.

Extreme mortality and gradual increase of cases of measles in Baltimore during the past winter. From October to March, included, there were 149 deaths from measles, beginning with 3 in October and ending with 49 in March. A serious result for a disease usually considered trivial.

b. Prevalence and mortality of pneumonia in Baltimore. From October to March, included, there were 485 deaths from pneumonia in Baltimore, beginning with 33 in October and ending with 133 in March. There were many cases among the young. Before 45 single pneumonia is not usually considered dangerous. It is a question whether it is an inflammatory or contagious disease.

c. There has been a great prevalence of serous diarrhoea, apparently due to climatic changes and not to bad water.

d. Fifteen years ago he read a paper on the use of yellow jessamine in supra-orbital neuralgia. Believes it now almost a specific, next to ergot, in cerebral congestion. The tincture is used, and a stronger tincture is used than usual. He stops it when ptosis appears.

DR. GEORGE J. PRESTON then made a supplementary report on the subject of

PERITONEAL INFLAMMATION.

After speaking of the ease of opening the peritoneal cavity without danger, he said that the terms perityphlitis, perityphlitis and appendicitis were cumbersome and probably not correct, as it was doubtful if one occurred alone in man. The best division is into 1. Typhlitis stercoralis; 2. Perityphlitis; 3. Appendicitis. After reviewing the anatomy he said that appendicitis was not easily recognized during life. He enumerated the number of objects found in the cecum. The symptomatology is quite distinct. It is not easy to speak of its duration. Occasionally the sac ruptures, and again it sometimes takes on a chronic form. After speaking of the etiology, he said that cases of perityphlitis and typhoid fever were not seldom confused. The prognosis of simple typhlitis is good if all obstruction be removed. Sulphate of magnesia is dangerous with inflammation. An operation should be avoided, but pus should be evacuated, and the evacuating needle as an aid to diagnosis is not so dangerous as was supposed. He cited two cases from his own practice, in one of which an operation was performed with good results.

DR. WILLIAM B. CANFIELD, in referring to Dr. Williams' paper, spoke of the part which intemperance played in the large mortality from pneumonia among the younger adults, and also of the contagious element of the disease, as well as its inflammatory nature.

DR. JOSEPH T. SMITH spoke of bad and unfiltered water as causing diarrhoea.

DR. P. C. WILLIAMS replied that intemperance increased the mortality of all diseases. About 70 per cent. in hospital die of diseases in which intemperance played an important part. In the first quarter of 1887 there were 199 deaths from pneumonia in Baltimore, and in the first quarter of 1888, 335 deaths. He believed in the inflammatory theory.

DR. WM. RICKERT approved of recognizing the International Medical Congress. He thought that climate had much to do with the causation of pneumonia, diarrhoea and dysentery. He thought that supra-orbital neuralgia was a symptom and not a disease.

DR. RICHARD GUNDRY recalled treatment by bleeding. He thinks little of treatment, but prefers small doses frequently repeated. He fully believes that diarrhoea and dysentery are due to climatic changes.

DR. L. E. NEALE then read a paper comparing CESAREAN SECTION AND CRANIOTOMY ON THE LIVING CHILD.

After reciting two cases he proceeded to mention

the best possible treatment of contracted pelvis by

1. Removal of the uterine appendages before conception occurs.

2. Induction of premature labor at a period of extra-uterine foetal viability.

After speaking of delivery by version forceps and other means in contracted pelvis, he said the last resort was Cæsarean section, or craniotomy. Craniotomy destroys one-half of the human lives at stake, while Sanger's operation as now performed saves almost all mothers and children. He does not believe that pelvimetry on the living subject at term is always sufficiently accurate to be a guide, for we have no means of measuring the head of the unborn child. It does not seem as if, the natural passages being $2\frac{1}{2}$ inches conjugate, the line of natural delivery should be drawn there. Craniotomy does not seem right when death is certain for the child, while Cæsarean section gives them both a chance.

DR. J. H. BRANHAM thought too little was said about the mortality to the child. The operation should be done at the time of election, and this is not at full term.

DR. GEO. W. MILTENBERGER said that a week or two before full term was an equally favorable time. The uterus was just as capable of contracting, and it had no effect on the mortality of the child.

DR. J. H. BRANHAM thought that a week or two earlier made a great difference in the viability of the child; he also thought that we could judge of the arrival of full term by the cervix.

DR. GEO. W. MILTENBERGER did not agree with Dr. Branham at all. In a large proportion of primipara, children are delivered one or two weeks before the time with no harm to mother or child. It was not possible to make such hair-splitting distinctions in the condition of the cervix.

DR. WILMER BRINTON thought that more stress should have been laid on pelvimetry, and the result would decide as to craniotomy or Cæsarean section. He did not think that foreign statistics of operation could apply to this country.

DR. L. E. NEALE, in conclusion, said that he operated as near full term as it was possible to find. He does practice pelvimetry, but it does not always seem free from difficulties.

THURSDAY, APRIL 26—THIRD DAY.

DR. GEORGE H. ROHÉ, Chairman of the Section on Sanitary Science, read a paper on

RESTRICTION OF CONTAGIOUS AND INFECTIOUS DISEASES.

Of the deaths in Baltimore during the past five years, 43.2 per cent. were due to infectious diseases, in which are included pneumonia, consumption and diarrhoea. Many of the diseases may be prevented by sanitary measures. Diseases are imported and domestic. There are many defects in quarantine in Baltimore. There are three ways of preventing diseases, by

1. Compulsory notification of contagious diseases.
2. Isolation.
3. Prompt disinfection.

1. The physician should report such diseases and should be paid for it by the Government.

2. Isolation is very important, whether in hospital or private houses.

3. Disinfection may be effectually carried out by mercuric chloride (1-500), chloride of lime, 6 ozs. to 1 gallon, and a solution of the hypochlorite of sodium. Soluble phenyl is also excellent.

DR. JOHN MORRIS read a paper on

UNSANITARY AGENTS IN COMMON USE.

This included trees, ice boxes, refrigerators and filters. He pointed out the dangers of too many trees about a country house and enumerated the healthy and dangerous trees and their soils. He spoke of the danger of preserving foods, etc., in ice-boxes, and the advantages of using refrigerators through which there passed a current of cool, dry air, laden with the vapor of the chloride of sodium and permanganate of potash. He referred to impure drinking-water and to the fallacies in many filters.

DR. JOHN S. CONRAD, in referring to Dr. Rohé's paper, thought that quarantine should be under the control of the Government as a part of the U. S. Marine Service. Different degrees of strictness at different ports did harm to commerce. Crowding in quarantine sometimes spreads disease. He felt doubtful about the decided germ destroying power of all the remedies mentioned.

DR. JOHN MORRIS referred to three recent cases of small-pox in Baltimore and the efficiency of the city Board of Health in preventing the spread of this disease. He did not think physicians should think of taking pay for such noble work.

DR. WILLIAM B. CANFIELD said he had arrived at the port of Baltimore from Europe in 1886, and, although there was a case of small-pox on board, there was a delay of about fifteen minutes only at quarantine, and all landed. A few weeks later small-pox broke out in a Western town, and it was traced to this steamer.

DR. GEORGE H. ROHÉ could bring evidence of the efficacy of the disinfectants mentioned by him. He thought householders objected to reporting cases of infectious diseases on account of the inconvenience and expense of disinfecting. The Government should do this.

DR. THOMAS S. LATIMER read a paper on

REFLEXES,

in which he referred to the fact that reflexes were rarely absent in health, and often absent or exaggerated in certain diseases. He thought their study had grown in importance since the elaborate work of Lombard.

DR. JOHN S. CONRAD read a paper entitled

HALLUCINATION, AND ITS ALLIED STATES,

in which he ably discussed hallucinations, delusions, illusions in the sane and insane.

DR. WILLIAM B. CANFIELD read a paper on

THE MICROSCOPICAL EXAMINATION OF URINARY SEDIMENT,

in which he dwelt more particularly upon blood, pus,

epithelium and casts in all their varieties, not omitting the details of the technique of searching for sediment.

DR. SAMUEL THEOBALD read a paper on

THE INFLUENCE WHICH THE DISCOVERY OF COCAINE
HAS EXERTED UPON OPHTHALMIC SURGERY.

in which he referred to its advantage in cataract, squint, and other operations on the eye, and as rendering more bearable applications of strong astringents in granular lids.

DR. W. R. MONROE then read a paper on

OXYGEN AS A THERAPEUTIC AGENT.

He reviewed the advantages of the use of oxygen in different diseases, and advocated its more general use by the regular profession.

DR. CHARLES G. HILL read a paper on

ALCOHOL IN ITS RELATION TO INEBRIETY.

After considering the number of drunkards in this country and the fact that 20 per cent. of all cases of insanity could be traced to inebriety, he treated the subject of alcohol as a food and as a narcotic, and then discussed the different diseases caused by inebriety and the necessity of physicians paying more attention to guarding against this in their practice.

DR. WHITFIELD WINSEY read a paper on *Some Thoughts on Blood-letting*, in which he advocated the revival of this mode of treatment.

DR. CHARLES O'DONOVAN, JR., read a paper on *A Case of Urethral Stricture with Severe and Unusual Complications*.

DR. HENRY SALZER read a paper on *Dietetics in Febrile Conditions*.

DR. J. H. BRANHAM one on *Excision of the Larvnx, with a case*.

DR. J. H. DEWOLF one on *Urgent Needs of the Medical Profession*.

The following were elected

OFFICERS FOR 1888-89.

President—Dr. John Morris.

Vice-Presidents—Dr. J. Edwin Michael. Dr. Thos. B. Evans.

Recording Secretary—Dr. G. Lane Taneyhill.

Assistant Secretary—Dr. Robert T. Wilson.

Corresponding Secretary—Dr. Jos. T. Smith.

Reporting Secretary—Dr. William B. Canfield.

Treasurer—Dr. W. F. A. Kemp.

CHICAGO MEDICO-LEGAL SOCIETY.

Meeting of March 3, 1888.

E. J. DOERING, M.D., PRESIDENT.

DR. L. L. MCARTHUR read a paper on

THE MEDICO-LEGAL ASPECT OF POTT'S FRACTURE.

(See p. 553.)

DR. JOHN E. OWENS: I am glad this subject has been brought before the Society. So far as my own practice goes I never trust myself, in the treatment of a fracture of this kind, with any other than the

long splint to which the author of the paper has just called your attention. The splint is technically Dupuytren's splint, the leg being protected with a wedge-shaped piece, the thick portion of the wedge being below and reaching to a point just above the inner malleolus, serving for a fulcrum. The portion of the splint which extends a few inches below the sole of the foot is not necessarily padded; it may be covered with some thin cotton, the foot being bound to the lowest portion by a bandage or adhesive plaster. The plaster of Paris treatment is one which I think has surprised more doctors in general practice and surgeons in their special practice of surgery than any other one splint that has been brought to bear upon Pott's fracture, or analogous injuries, like fracture of the fibula itself, without other complication. In reference to the point that the inner malleolus is broken in Pott's fracture, I have seen as well-marked cases of deformity without any fracture whatever of this portion of the tibia as could possibly have occurred with such a complication. So I think that, while this is often a complication of the fracture under discussion, it is not so in the majority of cases. I remember that about twelve or fifteen years ago a case came to Rush College clinic with great deformity. Prof. Gunn said nothing before the patient that would create trouble between her and her medical attendant, but after she left the room he explained fully the defect in treatment which induced the result. He suggested, in this case, cutting down upon the fibula, dividing it, and bringing the bones into their proper relation to the tibia. The reason the deformity exists is because the broken fragments are closely approximated to the outer surface of the tibia, and having united there it is impossible, without some operation, to remedy it. The operation was not performed at that time, but it is one that is well worth thinking of. It is quite practical and I think would remedy some, at least, of the deformities. The rupture of the internal lateral ligament is perhaps the worst feature in Pott's fracture, as union is usually defective.

DR. E. W. ANDREWS: I differ from the last speaker in one matter: I should advise every practitioner who handles surgical cases never to allow himself to diagnose a fracture by an inference from tenderness, or absence of fracture by absence of tenderness. One who practices surgery and treats fractures must, for self-preservation, in every case make a positive diagnosis. I should never treat a fracture where I could not obtain authority to anesthetize the patient if I thought best, and make an examination so thorough as to satisfy myself whether the bone was broken.

The uncertainty in terminology which the reader has referred to, in Pott's fracture, as having caused many physicians to employ a looseness of expression, runs through the books also. Several of the standard works on surgery speak of Pott's fracture, with or without fracture of the inner malleolus.

The author says the medico-legal aspect of the case will depend largely upon the physician's treatment. We all wish it could be so, but the medico-legal aspects of the case are quite different from the purely medical ones, and I should say they depend upon about three things: careful prognosis, good wit-

nesses and careful records. In the first place the medico-legal aspects may depend upon the nature of the prognosis which you have given to the patient, as this will largely influence him in his desire to bring the matter to trial. It is often suggested to the patient that the doctor has been incompetent or negligent in his treatment when he is disappointed at the results of a fracture. He has not obtained the same result which some friend has obtained. Too often the doctor has not given an absolutely correct prognosis, inasmuch as no one can promise a good result from any fracture. The physician may expect a good result and may so promise to the patient, but if he is wise he will not do so; he will not fail to let the patient know in the case of any fracture the many possibilities of bad results that hang about the case—of non-union, of an ankylosis. I think we are justified in putting the worst before the patient, not with the idea of winning any greater credit for ourselves, but as a matter of protection. Secondly, I think the medico-legal aspect of the question will depend not alone upon the physician's skill in treatment, but upon his ability to summon witnesses when it comes to trial. Every physician who treats a case of fracture, easy or difficult, whether he thinks it is sure to result well or not, should have his witnesses. Most physicians, in handling such a serious matter as a fracture, do have witnesses. They require assistants, and it is seldom any one attempts to set a fracture without having some one else by, but there are times when you are tempted to do so, and my advice is, never do it. As Mr. Punch said to those about to marry, "Don't." You will find that your ability to bring witnesses will deter lawyers from bringing suits against you, and the facilities they may have for finding out that you have not witnesses will enable them to push claims for blackmail. In the third place I would say, be careful of your records. Records should include the details of your examination and diagnosis, the date of the occurrence and also the names of witnesses present. In this way you can fortify yourself. In these records should be preserved the letters you have received in regard to the case. The patient may be sent from your hands to another physician, and, if you send letters, keep a copy of them. You may have received letters in return stating that the patient arrived in a certain condition. These and all similar papers should be preserved; they may be worth thousands of dollars to you any time for about two years, after which I believe, in Illinois, the statute of limitations protects you.

DR. CLARK GAPEN: I do not know of anything to add to this discussion unless it would be to reiterate the care with regard to which records should be kept. I have noticed the moral influence of this upon an adversary time and again. I came face to face with a case of that kind about three years ago, in which, when the fact was presented to our adversary that the most thorough and careful records of the case had been kept from the beginning, the entire suit was abandoned. Bacon says that "Writing makes an exact man," and one who gets in the habit of writing acquires that habit of exactitude that is a warning, at least, to one's adversary.

DR. L. L. MCARTHUR: I am aware that, in presenting this paper, it was necessary to dwell considerably upon the technical points of the case in question, and in doing so it naturally gave to the paper rather a more surgical than a legal aspect, but I trusted to the development of legal questions.

The suggestion of Dr. Andrews that the proper name be given to the fracture, and his emphasis of the fact that all simple fractures of the fibula are not to be included as Pott's fracture, I think a good one.

I am glad to learn, simply as a matter of valuable information, that in the State of Illinois books and treatises on surgery and medicine are not matters of evidence.

That the interosseous ligament which binds the lower fragment of the fibula to the tibia exists and that it is of about the dimensions Dr. Hoadley mentioned, I, of course, am ready to admit; it is a self-evident proposition. But that the ligament situated at the point at which the fulcrum acts prevents rocking of the lower fragment after fracture has occurred, with its attendant laceration, I decidedly object to. I emphasize this point, as my attention was called to it by Dr. Miculicz as a simple way of diagnosing fracture of the lower portion of the fibula; it is not so easy when the fracture is above the middle of fibula.

DR. J. H. ETHERIDGE read a paper on

THE MEDICO-LEGAL ASPECT OF UTTERANCES MADE IN MEDICAL SOCIETIES.

A few months ago the retiring President of the Chicago Gynecological Society delivered the customary address upon relinquishing his office to his successor. In that address he advocated the extreme antiseptic treatment of parturient patients. He took the ground that disasters after delivery arose from micro-organisms gaining access to the uterine cavity and there producing larvæ. Hence the attending physician must see to it that all possible measures are taken to prevent the entrance of micro-organisms into the vagina and uterus of the lying-in patient. To this end he must wash his hands in an antiseptic fluid and destroy the micro-organisms thereon, and thus avoid conveying them into the vagina. He must render thoroughly antiseptic all instruments used in the process of delivery. The lower part of the parturient canal must be rendered thoroughly antiseptic. He must make few, if any, vaginal examinations.

At another meeting of the Chicago Gynecological Society the discussion of puerperal infection was continued. The doctrine of Semmelweis, first enunciated in 1847, that puerperal fever is caused by a poison introduced into the genital tract from without, was accepted by some of the Fellows *in toto*. The carrier of the poison is the hand of the physician or nurse, or some of the appliances used by them in the course of the labor or soon afterwards, as obstetrical instruments, sponges, syringes, etc. The pith of the discussion was enunciated by one speaker in these words: "*The belief that every case of puerperal fever arises from the absorption of decomposing organic matter from lesions of the genital tract, and that the materies peccans is introduced from without, throws a tre-*

medium weight of responsibility on the physician and nurse. Provided the patient has been surrendered entirely to their control, and she becomes the subject of puerperal fever, one or the other, or both, have directly infected her. The atmosphere, as a bearer of infection, may be excluded in the majority of cases.

In response to these assertions I raised the question of the medico-legal bearing of such teachings, and asked the speaker, if he were called upon as an expert witness in a case of alleged malpractice wherein the usual course of managing a case of labor had obtained, and puerperal fever had killed the patient subsequently, and he were asked the question, "Do you consider the practitioner responsible for that woman's death?" what his reply would be? His reply was: "*If the physician's fingers were the only objects that had come in contact with the genital tract of the woman, and if he had not observed the precautions already mentioned, and if the atmosphere, as a bearer of infection, could be excluded, it would be consistent with the facts in the case that the physician infected the woman.*"

As a practical bearing of this subject I desire to state that I received a letter from a physician in an Eastern town, after the publication of the discussion in question, wherein he gave an instance of the medico-legal interest of this subject: A man, whose wife had recently died of puerperal fever, took the initial steps of bringing a malpractice suit against the attending physician. He was incited thereto by a conscienceless Ishmaelite in the local medical profession, who assured him that he could win his case on the strength of opinions and articles published in the current medical literature.

DR. JAMES H. ETHERIDGE (oral continuation of paper): You may go through the whole of therapeutics and you will find that very little is absolutely settled in regard to the treatment of diseases. An attempt is being made at the present time, by believers in the micro-organism theory of causation of puerperal fever, to establish in the range of fixed subjects that of puerperal infection, but it seems to me we should be slow to accept this. The Semmelweis theory is subject to many fallacies; like an overcoat, it is convenient to put on and to take off. When a patient gets puerperal fever, and we find there has been unclean attendance on her, we may come to the conclusion that she has died from infection, but we will find a great many cases where this explanation will hardly answer, cases that have been taken care of in the most careful manner. We may, without using instruments or making a vaginal examination, determine the position of the child by external manipulation, and yet have puerperal fever follow. There the Semmelweis theory does not suit our convenience. We all know of, or have seen, cases time and again, where women have been taken care of by incompetent midwives or slovenly physicians, and yet these women do not take on the puerperal infection. The most dreadful obstetrical operations have been done and yet the women go straight along without any rise of temperature. I know the allegation is made that not all instances of exposure to puerperal infection will work, simply because there is an amount of so-called physiological resistance to bac-

terial influence, and in that way the patient escapes. That is a convenient loophole. We know that if we have an abrasion upon the finger, we are extremely careful to avoid any infection while dressing wounds, showing that in such emergencies we have a constant and persistent belief in the theory of infection.

By the advocates of the Semmelweis theory, the physician is directed, before attending to a lying-in patient, to wash his hands thoroughly with soap and a 2 per cent. solution of carbolic acid, but he wipes his hands upon a towel that is in the room while they are exposed to the atmosphere of the room. According to the advocates of the germ theory the atmosphere is loaded with micro-organisms, hence his cleanliness is not perfect. If he wish to be perfectly aseptic he should slide his hands up out of a bowl of carbolyzed water into the vagina. Between the time of the antiseptic hand-washing and the time of making a vaginal examination as commonly carried out, there is an abundance of time to acquire three or four layers of micro-organisms from the air on the obstetrician's hands. Right here I would like to make a quotation from Dr. Meriman. While this subject was under discussion at a meeting of the Chicago Gynecological Society in July last, Dr. Meriman made the following remarks, and I think they should be included in every discussion of the Semmelweis theory of puerperal infection:

"It strikes me that the vagina itself is not a very clean place in the majority of women, and that there is as much liability to sepsis from the vagina itself as from the physician's hand or finger. I should very much dislike to take a sponge or anything that contained a portion of the fluid of a woman in labor and bring it in contact with a wound where I wanted to guard against sepsis and against poisoning. I should be very much afraid to take any of that vaginal fluid and bring it in contact with the wound in an ovariectomy, or to make a vaginal examination and then proceed at once to the operation. Supposing I passed my disinfected finger into the vagina and then, without any new disinfection, proceeded to an ovariectomy, I should expect trouble. It strikes me we have more danger from an unclean vagina than from the hands of the physician. I do not imagine that in the majority of instances the finger of the physician is such a contaminating source of trouble as is claimed. If this is the case, if it is all brought in from the outside, we ought to insist that there shall be no sheet used on the patient, no garment brought about the bed, no old quilt or anything of that kind placed in contact with her that has not been just washed and disinfected, and we should insist upon it that at the beginning of labor the vagina should be thoroughly disinfected by being douched with a corrosive solution, in order to prevent this danger of contamination to the patient."

One other point: We are instructed by antiseptic directions in regard to the management of the vagina previous to labor, to have it thoroughly antiseptized by chloride injections, and consequently the poor vagina is douched. If after such an antiseptic injection we could take out the vagina and examine it, I think we would find that not more than one-third

of its surface had been touched by this fluid. We know that with a bivalve or trivalve speculum we can hardly spread the vagina until we get a tense and shining appearance of its surface. How is it possible to bathe all of the vaginal surface by douching in the ordinary way? How long will it be before the Semmelweis theory will be modified or before something better will take its place? We find all the way through medicine and surgery that theories are taken up and abandoned. An instance in chemistry will answer the purpose of illustration. A few years ago it was a great point for chemists to be able to give a test for artificial bitters introduced into beers. A gentleman named Allen, the author of "Allen's Comparative Analysis," said that all bitter principles of beer could be precipitated by using a certain preparation of lead, a solution of the subacetate. He wrote upon this and it went out in the journals and books and was looked upon as authoritative; it was something tangible, it could be weighed, seen, felt, in this way they could test for aloes, quassia and the different bitter principles that the original hop has failed to give in large quantities. In those days Professor Allen was an authority on such subjects. Suits were lost or won on his testimony. But this same gentleman subsequently abandoned that idea and said it was still possible to get a bitter taste, after using this test, and that he was unable to dissolve out, with the subacetate of lead, all the bitters. Let us suppose that somebody had gone into the courts and brought suit against one of those great manufacturers of malt liquors for adulterating his malt liquors in the old country; he would have won without a question. Another interesting point which shows how accepted theories have a strong hold upon the world, is the subject of fermentation. It was taught for a long time that fermentation was caused through the means of contact with oxygen. Liebig first brought this out, and it was unquestioningly taught in the medical books. Oxygen was the only thing necessary to fermentation. The scientific world, for years, considered that point settled. Along came Pasteur who made chemical experiments, and found that oxygen from the chlorate of potassium would not produce fermentation, and that led to the question, is there oxygen and oxygen? His investigation of fermentation went on still further, while he was working on his germ theory of disease, and he made, finally, an important discovery which revolutionized the theory, viz., it was not oxygen, but microorganism that caused fermentation. Nay, furthermore, he demonstrated that we can get fermentation without oxygen. In the range of surgery there are a great many theories accepted and abandoned from time to time. Not many years ago the man who opened the abdomen without having a spray of carbolic acid playing upon it, was guilty of criminal neglect. We have all been in hospitals where we have seen preparations made for a large spray to be thrown on the operator and the patient; it was looked upon as a *sine qua non* in all surgical operations. In opening an abscess it was directed that it be covered with gauze, a bistoury slipped under it and used in order

that the abscess might not be exposed to the air. This was what was taught by Lister. He regarded it as being absolutely indispensable that there must be no uncovering of the wound in any way lest the microorganism got in there. So with iodoform, nobody thought we could treat a wound without covering it with iodoform. Five years ago the Parisian surgeons all used iodoform lavishly in surgical dressings. Wounds were so buried in this drug that they were invisible. To-day not one of them uses iodoform in surgical dressings. And so with antiseptic precautions generally, the belief existed only a few years ago that any one who opened the abdomen must undergo the most careful preparation of the hands; instruments should be washed in a 95 per cent. solution of carbolic acid, then thrown into a 2 per cent. solution during the operation, and in this way the carbolic acid must be kept constantly in contact with the instruments. To go into one of these operating rooms of an advanced gynecologist was almost like going into a museum, it was very interesting, and the scientific accuracy with which everything was done was astonishing. Now we go to the other extreme. I know a gentleman who avers that he has done laparotomies for years, without the slightest antiseptic drug precaution, because he does not believe in killing microorganisms with antiseptic drugs; all that he uses is cleanliness. The antiseptic man will say that this is antiseptis in another form. Admitted, but will he kindly explain why the terrible, death dealing microorganisms so constantly in the air and undestroyed by stinking drugs do not destroy this gentleman's patients?

Only a short time ago, carbolic acid and iodoform were regarded as reliable bactericides. To-day, iodoform, it is claimed, is not a *reliable* destroyer of germs—hence, it is going out of use as a germicide. Carbolic acid, some one now claims, is so defective in germicidal properties that microorganisms gambol sportively in its solutions. These points are mentioned as being illustrative of the complete changes that medical opinions so often undergo in a few years. Here is the Semmelweis theory now claiming our consideration. It is so firmly believed in, that at least one young man is willing to swear, on the witness stand as an obstetrical expert, that a death from puerperal fever can be laid at that door of the attending physician! Let this theory depend on an alleged microorganism that no one has seen, excepting Pasteur, who *thinks* that he once saw it, and all other possible causes, which are certainly fully as rational are coughed down and ignored. It is so possible to have, a few years hence, another, and perhaps, a better, an unassailably demonstrable theory of the causation of puerperal fever, that I am astonished that anyone can utter such words as were quoted early in my remarks, while the Semmelweis theory is so valuable.

This closes what I have to say. It was simply to introduce this subject. I have brought it before the society, and it seems to me that until we have theories and treatment of cases that are reliable and accurate, and beyond attack, the utterances I have quoted from the Gynecological Society of Chicago,

should be thoughtfully gone over before being given to the public. Just as sure as we live, if we endorse such utterances as these, we are going to have, in the next few years, a great many malpractice suits brought to our doors. In ten years, assertions of the kind I have quoted to-night will be laughed at rather than endorsed by the profession of this city.

DR. C. T. PARKS: I did not expect to say a word upon this question. I certainly am strongly an advocate of the principle of not making positive assertions on any ground, certainly not on this ground of puerperal fever which always has been a source of annoyance to the profession, and never has been thoroughly understood or the cause of it explained. Personal experience is about the only thing I can depend upon. I go upon the general principle that there is no man who practices medicine, but does so with a desire for his own good and the good of his patient. I do not think there is any man but will attempt to have a clean patient, and a clean person as far as he can; true, there are some who do not seem to go very far. Those who do not make an attempt to take care of the patient and themselves are blameless in the matter, I believe. In my experience, I have seen cases of puerperal fever follow, notwithstanding the fact that the utmost care has been given by conscientious physicians who were thoroughly posted in antiseptic treatment, and the care of patients in every way, and of themselves. A few days ago a case of this kind happened in the practice of a gentleman who is well-known in this society, and who for several years has exercised the greatest care in using antiseptic treatment, even going so far as to use not only large quantities of douches but as well large external dressings. But notwithstanding all this care with reference to his patient, the nurse and himself, the patient got puerperal fever and died inside of ten days of acute peritonitis. In that case the infection did not come from the doctor nor the nurse, and if it came at all, it was from the decomposing detritus of the patient's body.

DR. D. A. K. STEELE: I have nothing special to say on this subject, only to agree with what Professor Parkes has said, that we should not be too hasty in putting forth dogmatic assertions in this matter. I am as firm a believer in the germ theory as any one, and yet every once in a while cases come up that puzzle us, cases such as referred to by Dr. Parkes, where it is difficult to trace the relation between cause and effect. On the other hand, some of us who have practiced for years, before antiseptics were thought so much of as to-day, have never had a case of puerperal fever occur in our obstetrical practice, so that the Semmelweis theory seems sometimes not to explain these cases; they don't all seem to be due to infection from without—from the nurse or the doctor. But when we see a physician who is careless and slovenly, who will go from a case of erysipelas to a lying-in woman, and following that the woman is taken with puerperal septicaemia, the relation seems so direct that we say it lies at the door of the doctor. Such a case has come under my observation during the last month, where it could be traced to an infec-

tious disease communicated to the lying-in woman by the physician, and yet I would be very careful in laying down an absolute law or making an absolute statement; I would hesitate to go into court in a case as clear as that and say absolutely that this doctor was responsible for the woman's death. There may have been some factors other than that having a direct bearing on the case.

DR. J. C. HOAG: I feel a little reluctant to speak on this subject, and yet feel that I ought to do so, as a portion of the discussion in the Chicago Gynecological Society was upon a paper which I wrote, but which I did not hear discussed. I think such remarks as Dr. Steele has made are worthy of all commendation, the point being this, that no matter what our views may be, so far as public expression is given to them they should be free from dogmatism. I entirely concur, for the most part, in such expressions as Dr. Earle has frequently given utterance to. I think that Dr. Etheridge, in his paper, has not by any means expressed the true condition of affairs. I think the germ theory of disease is no longer a matter of theory, but an established fact, in its principal relations, at least. If we are to find fault with hasty or ill-considered utterances on this subject we will presently be getting back to such conditions as obtained not alone in obstetrics, but the whole field of surgery, eighteen years ago, the time when Lister made his wonderful discoveries. To my mind the proof of the pudding is in the eating; those who advocate the germ theory of disease and follow out its logical teachings are the safe surgeons and obstetricians. That puerperal fever was one of the most destructive of all diseases is proved by the Berlin Commission who reported some years ago that the deaths from puerperal fever exceeded those from cholera and small-pox combined. The most wonderful progress has been made by those who do believe in the germ theory of disease.

In regard to the methods of prevention there is a difference of opinion; some in their zeal wish to use the most powerful antiseptic agents, and some do not believe that they are at all necessary. My own opinion in the matter is that, for the most part, the vagina is to be regarded as practically in an aseptic condition. That germs are present there there is no possible doubt, because they can be found at any time by a little investigation, but that they are very infrequently the source of puerperal infection is quite as certain; witness the result of labor cases that are left entirely to nature. It has been proven again and again that where women are left entirely alone they get along without any septic infection. In the Vienna Hospital it has been often noticed, and in Semmelweis's time, that patients who gave birth to their children on the street and were brought into the hospital escaped infection and were often the only ones who did so. I remember of seeing, a few days ago, a reference to the statement of Créde that he did not believe in making vaginal examinations. At the time I wrote my paper in which I expressed myself as favorable to limiting the practice of making vaginal examinations, I had seen no reference to this. Every now and then an epidemic will break out, and the

source of infection can usually be traced to some careless student or physician, and I must say that in Vienna they trace most of these to Americans. It has happened that little epidemics have started up there directly traceable to examinations made by American physicians.

So far as my own treatment of these cases goes, I regard the patient in an aseptic condition and only liable to develop the poison from poison brought to her from without. There is no doubt that we can make out position by external palpation, but that this will entirely supersede the vaginal examination I do not believe. The matter of vaginal douches has been carried to too great an extent; I believe the vagina before labor and during parturition is in an aseptic condition unless something is brought to it from without, that following labor there is no special indication for douches.

Dr. Etheridge has expressed his admiration for Dr. Merriman's remarks. For my part, I should like to see such expressions as Credé's given the widest publication.

There are so many things to be said on this subject that I scarcely know where to begin or stop, but I cannot find in my own mind too much praise for those men who have brought this matter prominently to the front; and while some of us may make statements that seem too dogmatic and would perhaps stand a little modification, yet I think such plans of treatment as suggested by these men are the safer ones to follow.

DR. C. W. EARLE: I did not know that the honor had been assigned to me of being the chief advocate of the Semmelweiss doctrine. However, if it is accredited to me I accept it and thank you for the compliment. I am exceedingly sorry that Dr. Etheridge has taken us back and given about the same argument that must have been given 45 years ago, when the illustrious Semmelweiss, in the face of ridicule and scorn advanced his new ideas regarding puerperal fever. If it is true, as it was stated in the Gynecological Society some weeks ago, that certain remarks regarding the responsibility of doctors and nurses as carriers of contagion should not be made public, I hope for the credit of this Society that many of the remarks made against the Semmelweiss doctrine will never be given publicity. We have been carried back—far back among the antiquities. I suppose that Dr. Etheridge refers to some remarks that were made in the course of which it was stated that in the majority of cases puerperal infection comes from some source *without*. Now, it is not denied by those who urge this most strongly that there are occasional cases where it comes from within, at least it is impossible to explain some cases on any other hypothesis. While a great deal has been done by those who advocate this doctrine to bring it almost to perfection, it is not claimed that perfection has been reached, but that much has been done to prolong life and prevent deaths from puerperal diseases. I am very sure that the time has come when just such discussions as we are now having are needed, even if some of us do believe in advanced ideas not yet fully received by a large majority of the profes-

sion. It is to influence those who do not believe, those who have never attended a case of labor with clean hands, that it is necessary for us to take extreme ground in this matter to prevent a dreadful mortality.

In making examinations for life insurance, in one company I find over 17 per cent. of the applicants whose mothers have died from puerperal fever. In another company the mortality was over 12 per cent. In Semmelweiss' time the mortality was from 15 to 20 per cent., and in Lombardy, one year, every woman confined, died. Is it strange that Semmelweiss exclaimed that it was time that this murderous mortality was stopped? It has been stopped in a very large degree by antiseptic precautions, and while some methods that were tried in early years have been found to be useless, other methods have come up to supercede them. The matter of spraying, which I have never used or ordered, but which I would use if I believed the air particularly infected, has come in for its share of abuse. Lister stated to me several months since when I said to him "Some of my countrymen say that you have departed from your original ideas of antiseptics in that you discard the spray." "You may say," he said, "if you honor me by mentioning my name in connection with antiseptic methods, that we have discarded nothing. We have stopped doing certain things because we have found other methods which are better." There is nothing in Lister's practice or sayings which demonstrates that he has departed at all from his antiseptic methods. It is by carrying out these methods that the mortality has been brought down from the terrible percentage it had several years ago. I believe, and am conscientious in the belief, that if we could bring the entire medical profession up to a fair standard of antiseptic obstetrics we would do more to prolong life and save more people than are saved in all other departments of surgery and medicine. Not many of us are called upon to do laparotomies and hip-joint amputations, but almost everybody must attend cases of labor, and I maintain that we can reduce a mortality which has exceeded 10 or 20 per cent. down to 1 per cent. by these methods. I think it is quite probable that puerperal fever may come from an old suppurating point somewhere, which is lighted up afresh by the process of parturition. It is probably possible that infection may come through the respiratory or digestive passages, but in the majority of cases it is heterogenic, and if everybody will go to cases of labor with clean hands, will employ clean nurses, and see that the atmosphere of the room is not tainted, he will bring the mortality down to almost nothing. A few months ago Lawson Tait visited the hospital of Tarnier, who exhibited to him a chart on which was recorded the mortality for many years past. A reduction in deaths from 12 or 15 per cent. to less than 1 per cent. was demonstrated. How was it done? By carrying out antiseptic methods. He divides the whole period into three stages: The stage of inaction, with a mortality of 15, 16, and 17 per cent.; the stage of hygiene against infection and contagion, with a mortality of 4 to 6 per cent.; the stage of antiseptics, with a mortality of less than 1 per cent. It

is worth while to imitate it. We cannot, probably, bring it to perfection in private practice, but we can come so near it that the lives of hundreds will be saved.

In conclusion, I have only to add, that it appears to me that the time is coming when one will not have used ordinary care, skill or judgment in obstetrical practice unless the usual (to say the least) antiseptic methods have been employed.

(To be concluded.)

STATE MEDICINE.

Action by Missouri State Medical Association regarding National Quarantine and State Sanitary Affairs.

The special committee appointed to consider and report on the suggestions and recommendations of the President's Address at the recent meeting of the Missouri State Medical Association, reported through their chairman, Dr. H. C. Dalton, of St. Louis, the following resolutions, which were unanimously adopted:

WHEREAS, The experience of the past has shown that existing means relied upon for the protection of the people of the United States against the introduction of dangerous epidemic diseases from abroad are entirely inadequate to accomplish the desired object; and

WHEREAS, It being highly desirable, in order to insure such protection, that the measures employed shall be uniformly and systematically applied; therefore,

Resolved, 1. That, in the opinion of this Association, external quarantine measures should be under the control and direction of Federal authority to afford the highest degree of protection to the people of this country.

2. That this Association favor Congressional action looking to this end, as, in their judgment, there is present urgency for such legislation.

3. That copies of these resolutions be promptly forwarded by the Secretary to the Members and Senators of this State in Congress.

Also the following were passed unanimously:

WHEREAS, Recognizing the importance and value to the people of this State of a body clothed with official authority and provided with adequate financial means to enforce existing laws for the protection of the public against disease, the prevention of epidemics, and the furtherance of all wise measures designed to secure the sanitary welfare of the people of this State; therefore

Resolved, 1. That, reposing confidence in the wisdom, patriotism and ability of the State Board of Health as displayed in the midst of adverse circumstances, this Association approve the course and conduct of the Board, and pledge to its support in its work the influence and authority of this body.

2. That the members of this Association pledge themselves to actively exert their influence in their respective localities, during the coming year, in favor

of legislative action in support of the Board, and to enlighten their representatives in the General Assembly regarding the wishes of the Association in this respect.

3. That a special committee of three members on sanitary affairs be appointed by the President, with power to sit during the ensuing year, and advise with the Board in all matters concerning needed legislation for the more perfect protection of the public against disease.

Dr. F. J. Lutz, of St. Louis, Dr. J. E. Tefft, of Springfield, and Dr. B. G. Dysart, of Paris, were appointed members of the committee created in the last resolution.

DOMESTIC CORRESPONDENCE

DR. CUSHING AND THE MURDOCK LIQUID FOOD HOSPITAL.

Dear Sir:—Your correspondent, W., in his letter published in THE JOURNAL of April 21, has fallen into certain errors concerning me which I desire to correct. In regard to my correspondence with the Chairman of the Committee on Ethics and Discipline of the Massachusetts Medical Society, your correspondent absolutely perverts the meaning of the letter of the Secretary of that Committee, recently published, and mentioned by W.

Mr. Murdock, in referring to my correspondence with the committee, copies of which he enclosed with his letter to the *Boston Medical and Surgical Journal*, naturally fell into the technical error of supposing that my letter, addressed to the Chairman of that Committee as such, and answered by him, had necessarily been before the Committee officially. According to the aforesaid letter of the Secretary of the Committee, it appears that this was not the case, and that the letter of the Chairman of the Committee to me is to be considered as representing the opinions of himself, and of the other members of the Committee therein named, personally and unofficially. In either case the result was and is the same for me. The correspondence was in 1886, when, before becoming surgeon of the Murdock Hospital, I took sound and prudent advice, and put on record with the proper authority a statement of my proposed relations and position in the hospital. Neither my friends nor myself have seen any reason to be dissatisfied with my relations there since that time. I think that in common fairness you should publish the correspondence in question, copies of which you have already.

Although I do not know that the irrelevant assertions of your correspondent, W., concerning the *Annals of Gynecology*, of which I am editor, have any public interest, I may add that they are entirely erroneous and contrary to fact.

As your chatty correspondent does not publish his name, I have to conjecture the source of his inspiration from the animus legible between the lines of his letter.

Since, probably by accident, the letter has been

sent you just before the annual meeting of the Association, at which I hold a position in one of the Sections, I would beg you to insert this also before the meeting.

Very respectfully,

E. W. CUSHING.

Boston, April 23, 1888.

BOOK REVIEWS.

THE PRESCRIPTION, Therapeutically, Pharmaceutically, and Grammatically considered. By OTTO A. WALL, M.D., Ph. G., Professor of Pharmacy in the Missouri Medical College, etc. 8vo, pp. 184. St. Louis: Aug. Gast Bank Note and Litho. Co., 1888.

Every one will agree with the author that a theoretical and practical knowledge of the construction of the prescription is of great importance to both physician and pharmacist. Dr. Wall seems to have gone more thoroughly into the subject than any previous writer. In regard to weights and measures he is particularly full and explicit, 36 pages of the book being devoted to this subject.

We cannot agree with the author, however, when he says: "It is wrong, for instance, to write 0.2 centigram, because many readers accustomed to using the metric system, would be apt to overlook the word centigram and read the above as 0.2 gram, which it would be if the figures stood alone without any designation. The above should be written 0.002 gram, or 2 milligrams;" or when he says: "Fractions of these values (centigrams and milligrams) should be expressed in prescriptions in common fractions, and not in decimal fractions, thus $\frac{1}{2}$ milligram, and not 0.5 milligram; $\frac{1}{4}$ centigram, or $2\frac{1}{2}$ milligram, and not 0.25 centigram." In writing prescriptions to be filled by a druggist not entirely familiar with the decimal system it may be safer to write as the author suggests, but the other method is still correct. It is a serious question whether the world and literature would not be better off if common fractions were consigned to oblivion. The mixing of common fractions in the metric system is about as bad as using dollars, shillings, kopeks, and pfennigs in the same bill. Germany tried to improve on the metric system and failed; the system, as it stands, is better than any other, and no so-called improvement that has been suggested has any particular merit. As regards the mistaking of 0.2 centigram for 0.2 gram, it may be said that error is practically impossible if we write 0.2 centig.

But Dr. Wall has written a good book on prescriptions, and one that we can highly recommend.

MISCELLANEOUS.

VITAL STATISTICS IN ILLINOIS.—The report of the meeting of the Illinois State Board of Health, held on April 10 and 20, says: "For the first time since the collection of vital statistics was begun all the counties have made returns of births and deaths. These, which are for the year 1887, show a general improvement and increased fullness. A total of 32,164 deaths

and a total of 62,337 births are reported for the whole State, being an increase of 2,762 death returns and 3,144 birth returns, as compared with the returns of the previous year. While there is noted this general improvement, a few counties still show a laxity of interest and consequent comparative imperfection of returns.

"THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNCEOLOGISTS" was formed at Buffalo on April 19, it said with a membership of 34. It will meet in Washington on September 18-20, 1888.

DETECTION OF DAMPNESS IN WALLS.—J. Nessler says, in the *Chemiker Zeitung*, that a sheet of gelatine placed against a wall suspected of being damp will curl away from the wall if dampness exists.

A SANITARY CONFERENCE AT SPRINGFIELD, ILL., will be held at an early date. It will be attended by health authorities of cities, towns and villages of Illinois to promote local sanitation.

DR. EDWARD G. LORING, the well-known ophthalmologist, died suddenly in New York City on Monday, April 23. He was about 51 years of age.

ILLEGAL PRACTICE IN NEW JERSEY.—The Essex County Medical Society has begun to take measures against the illegal practitioners of Newark, N. J.

BOARDS OF HEALTH IN OHIO.—By a new law in Ohio a board of health is to be established in every city or village containing more than 500 inhabitants.

THE NEBRASKA STATE MEDICAL SOCIETY will meet in Lincoln early in June. The exact date has not been fixed.

THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY is a new college recently established in Detroit.

THE IOWA STATE MEDICAL SOCIETY will meet at Iowa City on May 15.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM APRIL 21, 1888, TO APRIL 27, 1888.

Lieut.-Col. Jos. C. Baily, Asst. Medical Purveyor, granted leave of absence for twenty days on surgeon's certificate of disability, with permission to apply for an extension. S. O. 92, A. G. O., April 21, 1888.

Lieut. Col. J. C. Baily, Asst. Medical Purveyor, will transfer the public funds for which he is responsible, and the charge of the medical purveying depot in New York City, temporarily, to Capt. Henry Johnson, Medical Storekeeper. S. O. 92, A. G. O., April 21, 1888.

Par. 13, S. O. 80, A. G. O., April 18, is revoked by par. 1, S. O. 93, A. G. O., April 23, and Major Geo. M. Sternberg, Surgeon U. S. Army, is directed to proceed to the Island of Cuba for the purpose named in the letter of the President addressed to the Secretary of War on the 17th inst. Upon the completion of this duty will return to his proper station, and submit his report to the President on or before June 25, 1888.

Major R. S. Vickery, Surgeon, granted leave of absence for four months, with permission to apply for an extension of two months and to go beyond sea. S. O. 95, A. G. O., April 25, 1888.

The operation of par. 17, S. O. 79 c. s., A. G. O. (so much thereof as relates to Capt. Geo. E. Bushnell, Asst. Surgeon U. S. Army), is suspended until May 1, 1888. S. O. 90, A. G. O., April 16, 1888.

First Lieut. Leonard Wood, Asst. Surgeon, granted one month's leave of absence, with permission to apply for an extension of two months. S. O. 41, Dept. Ariz., April 18, 1888.

First Lieut. Chas. L. G. Anderson, Asst. Surgeon, granted one month's leave of absence from June 1, 1888. Resignation accepted by the President, to take effect July 1, 1888. S. O. 92, A. G. O., April 21, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING APRIL 28, 1888.

Medical Inspector A. S. Oberly, granted six months' leave, with permission to visit Europe.

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No. 19.

THE PRESIDENT'S ADDRESS.
THE MISSION OF THE AMERICAN MEDICAL
ASSOCIATION.

Delivered at the Thirtieth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May 8, 1888.

BY A. Y. P. GARNETT, M.D.,
OF WASHINGTON, D. C.

Gentlemen of the American Medical Association:

Unlike my distinguished predecessor of the past year, who presented you with an able address replete with speculative interest and scientific research, I shall leave the abstruse problems of our science to be discussed and elaborated by the different Sections into which this Association has been divided with special reference to such themes and such discussions.

In casting about for a subject more concrete in its nature and directly useful in its application, I have determined to submit for your consideration a few practical reflections upon the mission of the American Medical Association.

I am especially moved to select this subject at this time by the fact that at no period since the formation of the American Medical Association have its enemies been so bold, so reckless, and so unscrupulous in their efforts to destroy its influence and power with the medical men of this country.

The paternal relation held by this organization to the entire medical profession of the United States imposes upon it duties and responsibilities of the gravest character. It stands out before the world as the chosen custodian of all that pertains to the preservation and advancement of professional interests, as well as to medical science *per se*; it is intrusted with the delicate and difficult task of elevating and maintaining the medical character of this country upon the highest moral and intellectual plane.

Taking a retrospective view through the almost half-century of its existence, we have no reason to be discouraged when we consider what has been accomplished; indeed, we have cause for congratulation as we recognize the many evidences of progress due directly to its influence, important results which could only have been achieved by combined and co-operative effort. The crystallizing at its very birth of the hitherto segregated elements of medical strength into one compact organization gave to it a power and authority recognized and felt by the entire medical profession of this country.

But while we may well feel gratified by a contemplation of the fruits of our labors in the past, it is obviously important that we should not be flattered into the belief that we have accomplished our mission, and permit ourselves to lapse into supine indifference with regard to the preeminently important object which yet remains to be worked out, I trust, through the instrumentality of this body. I refer, gentlemen, to a radical and thorough reform in the present medical education of the United States—the subject which, at this moment, presses itself more urgently than all others upon our attention.

Until this has been worked out we can never hope to see realized the grand designs of those wise and conservative men who, inspired by a true love for the profession of medicine and actuated by a high and honorable ambition for its success and commanding influence in this country, conceived and perfected the machinery which they considered adequate to the duty of achieving such a noble purpose.

Have we, gentlemen, who followed them, so controlled and directed this machinery as to fulfill their anticipations? Have we as yet fully tested its capacity to meet such expectations? Have we exhausted with unavailing results all the means at our command? To me it seems not.

In directing your attention to this apparent dereliction on the part of this Association, I trust that I may not be regarded as a sensorious pessimist, or that I am actuated by any other than the most earnest and sincere love for our noble profession.

It is but natural that those of us who have at heart the true interests of the medical profession, and who desire to encourage such progress and effect such reforms as must permeate and influence each section of our country, should make every endeavor to elevate our system of medical education to a standard equal in dignity and attainment to that which obtains in Europe, and hopefully look to this great representative body as the only central, dominating power through which such reforms are to be accomplished and perfected.

Our annual meetings must not be regarded solely for the purpose of considering the science of medicine either in its theoretical or practical aspect and supplemented by the pleasures of social intercourse. While we have ample cause to be gratified with the rapid progress made by some departments of medicine in this country within the last decade under the direction and stimulus of this Association, we are still confronted by the fact that very little has been effect-

ed in the direction of a general reform in the medical schools.

We all know that this subject of medical education and medical license has been an almost endless theme for discussion, coeval, indeed, with the establishment of medical schools in America, and more particularly has it been earnestly and ably considered since the organization of this Association; yet the question still presents itself, What can the American Medical Association do to further raise and promote a higher standard of medical education in the United States, to curtail the number of medical schools, and thereby gradually restrict to a conservative limit the annual hosts of graduates turned loose upon the public by those institutions? It will be borne in mind that in order to effect these desirable ends the initial step must be taken by this body in some mandatory form—experience has demonstrated that separate State societies and individual college regulations looking to such reformation have so far proved conspicuously futile. For a long period all measures brought before this Association having for their object an interference with or material modification of the systems pursued by the medical colleges were met by a determined and successful opposition on the part of those members who represented such institutions.

So manifest did it become that no important change could ever be effected in this direction while these schools were permitted to be represented as such in this body by their own officers that an amendment to the constitution was adopted abolishing this feature of representation in order, as it was hoped, that the proceedings of the Association might not be trammelled or embarrassed by the misguided efforts of such delegates.

Whilst the purpose and intent of this move was, as already stated, to free the Association from the predominating power of the schools and permit it to legislate in a fair, unprejudiced, and conservative spirit upon this important question, it has so far unquestionably failed to do so. It occurs to me that an explanation of this may be found in the fact that a large proportion of those who now attend our annual meetings are directly or indirectly connected with medical institutions, and no doubt are to a large extent, unconsciously, perhaps, influenced in their conduct on this floor by the supposed interest of their respective schools.

Permit me to disclaim here any purpose or desire to impugn the motives or loyalty to our profession of these distinguished representatives of our medical colleges. From my standpoint alone do I offer this hypothetical criticism upon their conduct in this regard; and while I cheerfully concede to them the honor and merit of having largely participated in laying the foundation of this Association, and having subsequently sustained its character, influence, and power as an agent for the general welfare of the medical profession in the United States, I can not permit myself to ignore the fact that they have not, collectively and unitedly, cooperated and wielded the power which they indisputably possess to advance and elevate our standard of medical education. Nor

do the records of the American Medical Association at any period of its past history show that unselfish and honest effort in this direction on the part of those who control and direct the educational movements of our profession which can either challenge our admiration or command our unqualified approval.

While it can not be denied that there are medical colleges in this country unsurpassed by those of Europe in their essential appointments and facilities for the education of medical students, the equally undeniable fact remains that we fall far behind them in the systems of study pursued.

This is more unfortunate and baneful when we consider the radical difference in point of education between the mass of students in this country and those of Europe. Contrasting the two from this standpoint, we find, as a rule, when the European student aspires to become a professional man, he recognizes the fact that in order to pass the ordeal of a college course successfully he must have the basis of a preliminary education, in most cases including a classical one. He is confronted at the very threshold by the rigid requirements of a fixed collegiate standard. He knows and appreciates that unless he possesses some educational capital or mental training to build upon he can not hope to master the complex and difficult work before him.

On the contrary, in this country the multitude of medical schools scattered throughout the land, to be found in almost every town and village, offering inducements to the uneducated as well as the educated by low fees and short terms of study to enter the profession, added to the almost universal desire prevailing among the working classes to become doctors and lawyers, have not failed to work incalculable mischief. The half-educated artisan, ambitious of becoming a professional man, meeting with no obstacle in the way of a preliminary education, throws aside his implements of trade and walks into the halls of some medical school to emerge therefrom after two short courses of lectures a full-fledged M.D., licensed to go forth as the accredited representative of a so-called learned profession. This, gentlemen, is no exaggerated picture resting alone upon some isolated or exceptional instance, but a practical fact of frequent occurrence, and one for which the schools are directly responsible, since they alone have the power to correct this evil. I am not unmindful of the many labored and specious arguments which have been advanced in defense of the schools, and the efforts made to relieve them of all censure in this regard by placing the responsibility on other shoulders. We have been reminded of the fact that all great revolutions move slowly; that we must not expect to accomplish radical reforms in our system of medical education in a few years; we must patiently wait for the seeds of reform, which, having been sown in rich soil, will in good time and season be sure to spring up, flourish, and reach a glorious fruition. All over the land, it is argued, under the stimulus of this Association, State and county societies have been organized upon a firm basis, engaged in active and efficient work, and destined to prove the direct instruments through which the desired reform is to be effected.

We have waited, and nearly half a century has rolled by in anxious expectation of seeing these educational centers take the initiative in pushing forward this great object, an object which in reality dominated all other considerations at the very birth of this Association. Have those expectations been realized? On the contrary, with a few notable exceptions, they have turned a deaf ear to the repeated suggestions and earnest demands of this body, and stubbornly pursued that course which they selfishly believed would secure to them the largest patronage through the shortest route from the hall of the matriculate to the platform of the licentiate. We are further told that colleges should not be held responsible for graduating illiterate and incompetent students. It was not reasonable to suppose that the faculties of those institutions would ignore or disregard the certificates and letters of recommendation presented by students applying to enter a college, when such letters were furnished by preceptors who were, perhaps, personal friends of some one or more of the professors. It does not seem to have occurred to the authors of such arguments that the final judgment which was to determine the student's fitness to receive a diploma and authorize him to present himself to the public as a competent person to practice medicine rests entirely with those who issue such diplomas. Can they so far disregard their duty to the profession and to the public as to accept the partial judgments or recommendations of irresponsible or prejudiced preceptors?

Almost all institutions of learning that possess the authority to grant licenses require preliminary examinations to determine the qualifications of students before accepting them as such, notably the two national academies of the United States—the Army and Navy. Why should not the medical schools, whose vast and comprehensive field of study more imperatively demands it, also require such examinations? The catalogues of many colleges state that certificates of educational acquirements are required of all students before matriculating; but I have the strongest grounds for believing that this rule is far more honored in the breach than in the observance.

Again, it has been alleged, by way of explanation for the recognized and unfortunate educational deficiencies pervading many medical communities, that it proceeds from a lack of study on the part of the general practitioners, especially those residing in rural districts, who find more congenial occupation in discussing politics, hunting, and farming than in the study of medical works, that the schools should not be held responsible for this condition of things. I would reply to this apology by asking if such members of the profession are, by reason of their surroundings, to lapse into this state of indifference and ignorance, is it not the more important that they should, before completing a collegiate course and receiving a diploma, be required to lay a solid foundation of education, both academic and medical, that would stand by them through this rust of negligence and decay of interest, than to commence in ignorance, progress in ignorance, and, like unto the man to whom only one talent was given, go and hide that in the earth? No, gentlemen; there is no escape for the medical schools of

this country from the responsibility of the obvious defects in our system of medical education; and the odium of a failure by them to reform that system must, like the shirt of Nessus, ever cling to them.

That the professions of law and medicine are overcrowded in this country, no man of common observation will deny. The ratio of professional men in the United States to the population exceeds that of any other country in the civilized world, so that any legitimate means of checking this evil which can be devised and carried into practical effect must be hailed by the medical world, as well as the general public, as an inestimable boon. The statistics recently published by the Illinois State Board of Health tending to show the annual number of graduates in medicine within the last three years, and the conclusions based upon those statistics published by the medical journals of the country, I have reason to believe, are not entirely accurate. In support of this opinion and the views expressed in the foregoing part of this address I shall take the liberty of directing your attention to a résumé of statistics bearing upon this subject, furnished me through the kindness and courtesy of Hon. N. H. R. Dawson, United States Commissioner of Education.

These will, no doubt, exhibit in a more forcible and impressive manner to your minds the especial subject under consideration than any individual argument, however logical or conclusive, that could be presented, particularly when it is remembered that they are prepared under the immediate authority and direction of the United States Government, having at its command far greater resources than any one State or county could employ.

"Total number of medical schools in the United States, 126; of these 93 are regular, 11 are 'eclectic,' 13 are 'homeopathic,' 3 are 'physio-medical,' and 4 are too indefinite for accurate description.

"Of these, 2 regular, 1 'eclectic,' 1 'physio-medical,' and 4 'indefinite' schools are not recognized by this Bureau, by State boards of health, by medical licensing boards, etc. Four other schools have been established or organized so recently that they reported no students or graduates for the year 1885-86. There remain 89 regular, 10 'eclectic,' 13 'homeopathic,' and 2 'physio-medical' schools from which statistics were obtained and tabulated in another part of that letter.

"Proceeding thereto, the list of medical schools on pages 5-11 showed that 63 regular, 2 'eclectic' and 4 'homeopathic' schools admitted male students only; that 1 'homeopathic' and 2 regular schools admitted female students only; that 10 regular, 8 'eclectic,' 8 'homeopathic,' and 2 'physio-medical' schools admitted both male and female students; and that 3 other schools, all regular, admitted colored pupils, one of these admitting both sexes and both races. As a whole, 70 schools admitted males only, 5 women only, 38 both sexes, and 1 everybody of suitable age.

"Studying this table further, we find two methods of instruction prevailing. One, the older, requires a student to attend substantially the same course of lectures twice before his examination for a degree; the other requires him to attend three distinct and

graded courses of lectures before his final examination. Of the 114 reporting schools, 1 requires only 1 course of lectures; 86 require 2 courses; these 87 I group together as following the older, or *repetition* method; 26 schools require 3 graded courses, and 1 school 4 such courses; these 27 I group together as prescribing the newer, or *graded*, method, with the following result as regards numbers:

Designations.	Graded method.			Repetition method.			All.		
	Schools.	Students.	Graduates.	Schools.	Students.	Graduates.	Schools.	Students.	Graduates.
Regular.....	21	1,839	383	68	7,752	2,826	89	9,591	3,209
Eclectic.....	1	24	14	9	578	187	10	602	201
Homeopathic.....	5	314	104	8	748	351	13	1,062	455
Physio-medical.....	0	0	0	2	47	28	2	47	28
All designations..	27	2,177	501	87	9,125	3,392	114	11,302	3,893

"This tabular summary is not introduced in order to discuss it, but in order to furnish a basis of *concrete* numbers, upon which the *percentage* numbers given below may be verified.

"The percentages are calculated so as to show for each kind of medical school the proportion preferring each of the two methods. I give first those relating to the 'graded' method:

Designations.	Percentage of—		
	Schools.	Students.	Graduates.
Homeopathic.....	38.5	29.6	22.9
Regular.....	23.6	19.2	11.9
Eclectic.....	10.0	4.0	7.0
Physio-medical.....	.0	.0	.0
All designations.....	23.7	19.3	12.0

"Next those percentages relating to the 'repetition' method:

Designations.	Percentage of—		
	Schools.	Students.	Graduates.
Eclectic.....	90.0	96.0	93.0
Regular.....	76.4	80.8	88.1
Homeopathic.....	61.5	76.4	77.1
All designations.....	76.3	80.7	87.1

"The foregoing percentages are instructive in two ways. We may compare the proportion designated 'regular' with the others in its own group, or with the proportion similarly named in the other group.

"The percentages of 'regular' schools, students, and graduates following the 'graded' method of instruction was less than the corresponding homeopathic percentages in that group. This would indicate that the regular schools, as a whole were less careful in the *method* of their instruction, so far as

the grading of studies is concerned. Is this a sign of less care in other ways? Does it explain any part of the success of well-educated homeopathic physicians in modern times? I do not draw this as a conclusion, but submit it as a query.

"Upon comparing the percentages designated 'regular' in both groups, we see that those in the 'repetition' group exceed those in the 'graded' group 52.8 as to schools, 61.6 as to students, 76.2 as to graduates.

"This indicates that regular schools following the older, two-course, or 'repetition' method admit students more readily, and confer degrees more copiously, than regular schools prescribing 'graded' courses of instruction. Do the schools in the 'repetition' group admit and graduate more readily *because* they have, as a whole, a lower ideal? I do not assert this. I ask the question.

"Returning now to the tabular summary on page 2 of this letter, I extract and summarize yet further the statistics relating to 'regular' medical education, and give percentages of graduates to students in each group, as follows:

Method of Instruction.	Number of students.	Number of graduates.	Per cent. of graduates to students.
21 "graded" colleges....	1,839	383	20.8
68 "repetition" colleges.	7,752	2,826	36.4
89 All methods.....	9,591	3,209	34.5

"This indicates a possibility that the requirements for graduation from the 21 colleges prescribing a graded course are more severe than those of the larger group. If the per cent. of graduates from the 'repetition' method colleges had been 20.8 instead of 36.4, *they would have graduated only 1,612, instead of 2,826.* On the other hand, if the 'graded' method colleges had graduated as many in proportion, 36.4 per cent., as the others, they would have granted diplomas to 669, instead of 383. If all these schools had graduated 20.8 per cent. of their students, those graduates would have numbered 1,995; if they had graduated 34.5 per cent., the graduates would have numbered 3,495. They actually graduated 3,209, or 34.5 per cent."

For the present year 1888, upon the basis of a population in the United States of 61,420,000, the ratio of practitioners of medicine to the population will average about 1 to every 580. In the city of Washington we have 1 practitioner to about every 485 inhabitants.

This very carefully prepared analysis of the medical schools of the United States, it will be observed, like that contained in the statistical report of the Illinois State Board of Health, rests largely upon the correctness of the catalogues put forth by these schools, and, though possessing some additional sources of information, can not be regarded as conclusively accurate, for the reason, as I have elsewhere stated, that in many instances the catalogues of colleges do not correctly represent the practical operations of

those institutions. In the city of Washington, with a population of 180,000 inhabitants, we have four medical schools, with the following list of matriculates during the past three years: One school of 41²/₃ per annum, or 125 for the three years; one school of 30 per annum or 90 for three years; one of 21²/₃ per annum, or 65 for three years; one school of 3²/₃ per annum, or 10 for three years—making a total of 113²/₃ matriculates per annum divided between four schools. Three of these require a three years' course of study; one requires that the student must belong to the *genus homo*, without regard to age, sex, color, or previous condition. With these figures before us, gentlemen, no fears, it seems to me, need be entertained of limiting to too small a number the professional men in this country; the supply will always be found equal to the demand. Even as far back as the days of Addison, more than a hundred years ago, when the facilities for obtaining a medical education must have been greatly restricted as compared with the present time, you will find the following language used by that celebrated author of the "Spectator" in speaking of the learned professions. He says:

"If, in the third place, we look into the profession of physic, we shall find a most formidable body of men; the sight of them is enough to make a man serious, for we may lay it down as a maxim that when a nation abounds in physicians it grows thin in people. This body of men in our own country may be described like the British army in Cæsar's time—some of them slay in chariots and some on foot."

If they are to continue to augment, through the reckless conduct of the colleges in this country, in the same ratio as they have done in the past ten years, let us at least endeavor to place them beyond the reproach and ridicule which at present so often attach to the name of doctor.

Entertaining the views above expressed, based in part upon these tabulated expositions, and inspired by the hope of initiating some practical move in the direction of educational reform, I respectfully submit for your consideration the following suggestions:

PROPOSITION 1. That a standing committee, to be called a committee on legislation, be appointed for each State, Territory, and the District of Columbia, to consist of five members of the medical profession in good standing, three of whom shall have no official connection with any medical school or college, whose duty it shall be to carry out as far as possible the following instructions:

First. That each one of said committees, or a majority thereof, shall attend the sessions of their respective Legislatures, or from time to time as their duties may require, for the purpose of using all honorable means looking to the reduction of the number of medical schools in the United States, and a consequent diminution in the annual number of medical graduates; that as a practical measure to this end they urge the passage of a law requiring that in the future granting of charters for creating medical schools, there shall be a clause in every such charter, requiring that all schools or colleges thus created shall demand a full term of four years' study before

granting a diploma to any student thereof, and that no student shall be admitted to matriculate who has not passed a satisfactory examination, both oral and written, in the ordinary branches of academic study; and, further, that any college failing to show a greater number than fifty matriculates annually for three consecutive years shall forfeit its charter and be abolished.

Second. That they use all diligent effort to secure an ordinance creating in each State and Territory where no such board at present exists, and the District of Columbia, a board of medical examiners, which shall have no connection with any medical school, and which shall be required to examine all applicants for license to practice medicine in their respective States, Territories, and the District of Columbia; and that any person who may be detected in practicing any branch of the healing art without a license granted by said board shall be subject to such penalties as the law may provide. That this committee may be authorized by statute to select and nominate to the governors of the States, Territories, and the District of Columbia seven competent and learned members of the medical profession to constitute said board of examiners, who shall have the exclusive power to issue licenses to practice the art and science of medicine and surgery.

Third. That the chairman of said committees of five be required to submit at each annual meeting of this association a report embracing a full statement of what has been accomplished by each.

PROPOSITION 2. That the faculties of the several medical schools within the limits of the United States be once more urgently requested to call a convention at some central point for the purpose of consultation, and adopting some general and uniform system of medical education more comprehensive and rigid in its requirements, and more in accord with the spirit of the age and the advanced progress of medical science, suggesting a four years' term of study, the requirement of a preliminary education, including some knowledge of the classics.

That any college or school which shall refuse to enter into such an arrangement as may be decided upon by said convention shall be excluded from all connection with the American Medical Association, and its alumni not recognized as members of the regular profession.

I am aware that these suggestions embrace some very radical and seemingly impracticable changes; but as they point, in my judgment, to the right direction, I trust that they may not prove to be seeds sown upon barren soil. Be that as it may, I shall at least enjoy the consciousness of having honestly, conscientiously, and fearlessly met the great and pressing issue of the day within the domain of our profession, and of having executed, to the best of my ability, the most important duty imposed by the responsible position to which you have elevated me.

It is with no little satisfaction that I can here refer to the recent successful meeting of the Ninth International Medical Congress which took place at the capital of the United States in September last.

To my lamented and distinguished predecessor as

president of this Association, the late Dr Austin Flint, belongs the credit of having suggested in his address at the meeting of the Association in 1884, that this congress of eminent scientists, embracing distinguished and renowned representatives of the medical profession from almost every civilized nation of the world, should, through the authority of the American Medical Association, and in the name of the entire medical profession of this country, be invited to hold its ninth meeting in the United States, and that a committee, appointed by this body, to attend the eighth meeting of the Congress at Copenhagen, be charged with the duty of conveying to that meeting this invitation.

Through the personal influence, ability, and diplomatic tact displayed by the judicious gentlemen intrusted with this delicate mission, the invitation was gracefully accepted by our foreign brethren, and Washington City selected as the place of meeting for the Ninth International Congress. It was a source of deep regret to those upon whom the duty devolved of arranging the preliminary work for this important gathering, as well as to the profession at large in this country and abroad, that so many of those who were identified with the movement at its inception should have subsequently dissociated themselves from all connection with the Congress, and thereby limited, in some degree, its influence, importance, and scientific value.

Notwithstanding this defection, however, we have abundant reason to congratulate the medical profession of the United States, and especially the members of this Association, upon the gratifying outcome of this fraternal reunion; and while contemplating with pride the fruits of our labors, we entertain no misgiving, now that a large portion of the scientific work has been submitted to the verdict of the medical world, as to what that verdict will be—*equal if not superior, to the work of any preceding Medical Congress.*

I should be recreant to the dictates of my individual feeling, as well as to that which, I doubt not, animates this entire assembly, were I to omit here any allusion to the particular occasion which at this moment awakens such widespread interest throughout this magnificent city. It is meet that we should avail ourselves of the opportunity to give expression to our sympathy and participate in the common rejoicing which greets this centennial year of her existence. Especially is such a manifestation on the part of this body appropriate, when it is remembered that just one hundred years ago this city of Cincinnati was founded and named by a member of our own profession, Dr. Arthur St. Clair, a native of Scotland, and first Territorial governor of Ohio. This spot, occupied by a fort in 1788, was selected by him as the seat of government, which he named Cincinnati, after the society of Cincinnatus, of which he was a prominent member. From this humble beginning, in the comparatively brief period of one century, like the ancient city of Rome, perched upon its seven hills, and claiming to be the mistress of the world, she now majestically reposes upon her many hills the queen of the West—conscious of her great-

ness, and justly proud of her achievements in all that constitutes a progressive and perfected civilization; esthetic in art; potential in physics; pre-eminent in science. We, her honored guests, offer the tribute of our admiration and our praise.

At this point, gentlemen, I deem it my duty to revert to a subject which has occasioned me a profound feeling of regret, and which, I trust, may awaken in your minds a responsive sentiment. I refer to the mortifying position in which the Rush monument committee has been placed by the apparent lack of interest and liberality on the part of the medical profession of this country. When we are reminded of the fact that this enterprise was inaugurated under the auspices of this Association, and the committee, authorized to raise, by voluntary subscription, a sufficient fund to proceed with the work, derived its power to do so from this body, it will be seen that we stand committed before the world as the projectors of this undertaking and justly responsible for its execution.

I shall make here no appeal upon the merits of the case, nor do I propose to attempt a eulogy upon so eminent a citizen and distinguished physician as Benjamin Rush. The record of his life as a patriot, a philosopher, and a physician, stands out as much a part of the history of his country as that of Washington himself.

We owe it, then, to ourselves to recognize the fact that in honoring the memory of such a representative of the medical profession we do honor to ourselves. Let me exhort you, therefore, to avert this impending shadow of reproach which now hovers over the medical men of our land.

Alv over the capital of our country we find statues erected in memory of statesmen, warriors, philosophers, and patriots, nor has the ever-active and ignoble sentiment of sectional prejudice failed to find there its expression in monumental brass and intended to perpetuate the bitter memories of a fratricidal strife. Let us, as members of a liberal and humane profession, set the example of seeking a higher moral plane to do honor to the man who loved his whole country for his country's sake, who loved science for the sake of science, and who loved mankind through the divine attributes of his nature.

In concluding this address, I desire to offer to you, gentlemen, my congratulations upon the proud and enduring position now occupied by this Association. Resting, as it does, upon the solid foundation of a moral, intellectual, and scientific basis, it has steadily from its birth gained in strength and influence and won for itself the support and approval of our brethren throughout the length and breadth of this country—to-day more powerful, more self-reliant, more progressive, and stronger in the affection of its members than at any former period of its existence. Let us indulge the hope that those of our earlier friends whose allegiance and interests have been temporarily alienated from us may ere long so subordinate the discrepancies of individual judgment and impulses of resentment to the fraternal agencies of a common calling, and the pacific de-

mands of a common science, as to feel justified in once more uniting with us in our efforts to maintain and perpetuate the power, influence, and usefulness of this wise, conservative, and philanthropic organization.

THE PRESIDENT'S ADDRESS TO THE MEDICAL EDITORS' ASSOCIATION, 1888.

Delivered at the Annual Meeting in May, 1888.

BY WILLIAM PORTER, M.D.,

OF ST. LOUIS.

Brother Editors:

It was your good pleasure to elect me your President for the year that closes with this session. It has been a year of anxiety and of work; a campaign year, and a year of achievement. I thank you all for the honor which your choice conferred, and for the support which accompanied that choice; yet I have greater satisfaction in remembering what you have done in 1887 to strengthen our National Association and to aid in the affairs of the last Medical Congress.

Through the success which has crowned both of these enterprises, a new dignity has come to the profession of our country, and you, gentlemen, as watchful guardians of what is rightly yours, will see that the prestige does not depart from those who have so richly earned it.

Two things have been clearly demonstrated during the year that has gone. 1st, the power of the medical press, which has so large a part in this Association. 2d, the value of unity.

It was, to a large extent, through the united efforts of the editors of medical journals here represented, that a once desperate possibility became a glorious certainty. A heavy responsibility was lifted from your shoulders as in last September the world's representatives grasped your hands in hearty approval.

Pleasant as is the retrospect, we must not yet rest upon our oars, satisfied with the progress already made. The current of life bears us not onward but backward, unless continued effort is put forth.

In our land with its ever new development, in our profession with its continued advance, there is no rest for the medical editor, no point of complete attainment. While there has been much to do in the past, there is more to do in the future. While we have had need of each other in the last decade, we have greater necessity for union in years to come.

Fully impressed with our strength and our requirements, I have desired to depart from our usual custom to-night and to discuss with you plans for a stronger organization and questions of importance in our work.

It may be asked, why have we need of a well-organized association? The clouds of '87 have rolled by and the peace of '88 is upon us; all is well.

Gentlemen, let me remind you that the God who made men, made them ambitious, and ambition in our day means rivalry.

I would not attempt to detract from the honor and

dignity to which many of our great institutions in the East have attained, nor would I undervalue the untold influence of some of the few medical journals not represented here. We are proud of their work, but we must not forget our part in life's struggle. While the long years of advantage have given to the East the older and stronger universities, the new wealth and energy of the West is giving large promise of a most substantial harvest.

Do not understand me that I would urge strife or sectional jealousy. Not for a moment would I hinder the dove which returns to the grand old ark of our National Society. But though science is cosmopolitan, personal interests may be local. I love my city better than some other city. I esteem my true and tried associates better than those of whom I know but little. I appreciate all honest workers in medical journalism, but I especially want to see the success of those interests here represented. This success we can accomplish if we are willing to labor with honest united effort.

It is one thing, however, to work for individual advancement; it is another, yet not necessarily antagonistic, to do all possible for the largest general result. While it is right that men should form local attachments, and have preference for place and person, it is wrong if in so doing they ignore others who would exercise the same right, and deny that equality which in this land is the birthright of every member of our glorious guild.

I am not an alarmist. I have abiding confidence in the ability of this Association and of the great National body with which we are so closely related, to go onward, to preserve their identity and usefulness, and withal to represent the profession of the United States.

But I fully understand that this position can only be maintained by resolving to stand firm, determined that those interests which are the inheritance of each of us, shall not be narrowed by sectional lines, nor be endangered by personal jealousies. I believe in peace and harmony, but I prefer that peace which is made secure by strength, and that harmony the key-note of which is well secured right. It is well to meet those with whom we have differed should they so desire, but it may be that in advancing half way we should do so in solid column.

The honest wish of every true American physician is that we may have a united profession and that the sharp dividing lines so recently drawn may be obliterated. Let me urge upon you that, in attempting to reach this end, we must not permit a process of absorption to go on which shall reduce one part of our land to the condition of an outlying province, controlled by and tributary to another part.

Rather let us seek to cement the union of professional brotherhood which should everywhere exist, by being true to our own sense of right. Let us honor the proffer of fellowship by extending the hand of self-respect filled with the fruits of patient labor.

If we would grow stronger and more worthy of the trust which is reposed in us by the students of current medical literature, we must guard against two dangers: The first is dissension in our own ranks; the

second, attacks from without. I do not fear the second, if we are careful to avoid the first.

There never was a time when a full understanding with each other and strong, true, aggressive action has been more needed than it is now. If we would prevent this goodly kingdom of ours from becoming a mere dependency, we must stand shoulder to shoulder. The Star of the East has reached its zenith, and "Westward the star of empire takes its way." The light of the former is bright and steady, but the imperial star of modern progress shines for us. Its brilliant rays reach every corner of our land, and its course is not stayed by mountain or river.

But words are vain if they do not call forth action. I would strengthen your faith in your mission, but "faith without works is dead." In this assembly is power; I would arouse it. There is enterprise; let it be stimulated. We have harmony of thought and unity of purpose; let us come closer together in a more definite organization for more effective work.

A strong Association can accomplish much where individual effort may be futile. There are many questions which demand attention. The further advancement of our State and National Associations, legal control of quackery, the International copyright, the questions proposed for discussion to-night, the upholding of our best schools and journals, and the exposure of poor ones; these are some of the matters of vital importance which call for harmonious and well organized action by the medical press of the land.

Do I overestimate the need of organization? Remember that in no other nation in the world are there so many medical journals, so many medical editors, ready to engage in any right enterprise for professional justice and advancement; and yet I do not hesitate to say that in no other country is there so much needless friction, so much misunderstanding of men and their motives.

Is not this, to a large extent, the result of a want of personal knowledge of each other, of a lack of a needed conference and plan?

I would oppose limitation of the utmost freedom of thought or speech, and only urge that which will more firmly unite us, and make more potent such action as we can together endorse. This much we need, and let us have it.

It has been charged that this Association is organized and conducted for purposes other than those of pure journalism.

I need not use this time and place to refute this slander, but it gives me the opportunity of asserting that if to band together to promote those interests which are just and right and common to us all, to expose fraud in and out of the profession in the North or South, to insist that he who is worthy shall be esteemed whether he comes from the far West or the distant East, to build up our local and State Societies, to further the cause of our National Association; if to unitedly plan to keep these and kindred questions before the profession be a conspiracy, then are we to-night conspirators of the deepest dye.

I glory in such an alliance. Aye, make the circle stronger and larger, till it shall include all who have

the oath of editorial knighthood upon their lips and the kingly purpose of right in their hearts.

In you, my seniors in years and experience, have I all confidence that the endurance and judgment which have enabled you to guide others through the wilderness of ignorance in the early stage of our professional history, will not desert you now, when keen adventurers and plausible dogmas are enticing the unwary at every turn.

Upon you, my brothers younger but no less zealous than these, falls the mantle of the leaders who have passed up out of sight. It is your privilege to show yourselves strong yet considerate, aggressive yet gentle, ready each week or month to couch a lance in defense of professional honor, or to speak a word of encouragement and approval to him who needs it.

Indite such thought that men shall catch up the leaves which you scatter far and wide, and give you in return the garland of praise. May your good deeds be known, and all your mistakes forgotten.

ORIGINAL ARTICLES.

A CASE OF HYSTERECTOMY.

Read before the Philadelphia County Medical Society, April 11, 1888.

BY W. W. KEEN, M.D.,

PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF PHILADELPHIA.

The following notes of this case I owe to the courtesy of Dr. John K. Mitchell, her attending physician: Miss X., æt. 42, American, author. Family history good. Previous personal history good up to about twelve years ago, when she began to suffer in many ways, pointing toward a uterine growth. After two years or more of treatment, Dr. S. Weir Mitchell recommended that the ovaries should be removed. This was done *per vaginam* by Dr. Wm. Goodell in the winter of 1876-77. The tumor diminished, but she has never been free from pain since, chiefly in the left hypochondrium, but extending both up and down. For between two and three years before I first saw her (January 25, 1887), her general health had been steadily growing worse, and the distress in the side increasing to such a degree that she was utterly unable to work, and was wretched alike in body and mind.

Status præsens, Jan. 25, 1887: Slight woman, æmic, not emaciated, complexion pasty. Heart and lungs normal. On examining abdomen externally a slight abnormal increase in uterus upward and to the left was detected. I supposed it the remnant of the old growth, but the patient did not desire a vaginal exploration made and I was unable to examine it further. There was here no pain or tenderness. An inch below the lowest angle of the ribs on the left side was situated a spot not larger than a quarter of a dollar, tender on pressure, and nearly corresponding in situation with a similar but less defined area of tenderness posteriorly. Most of the distress complained of was vaguely placed whereabouts.

The kidneys could be clearly outlined by percussion, and showed no change from the normal in their areas. The urine was natural, but sometimes contained a slight excess of uric acid formations; bowels always slightly sluggish and the appetite poor; no digestive trouble. She slept very ill, being unable to lie on the back or on the left side, as either position increased the pain in the side, and finally caused a suffocating sensation. It is also greatly aggravated by very slight physical exertion, by sitting long in one position, and by constipation. It is now so constant and severe that Miss X. complains of "losing her grip," of inability to work to good purpose, and of great irritability.

Treatment.—In spite of the previous ovarian and uterine trouble, the situation of the pain seemed to me to be so far from the former site of the ovaries that I was doubtful of their having any share in the present difficulty, though the thought of a nerve caught in the stump left after their removal occurred to me. My treatment was at first directed to the slight lithæmia. Alkaline waters and a regulated diet did little good, and I returned to the view of the implication of a nerve in the cicatrix, and for some weeks passed a galvanic current through the body, with one pole on the posterior tender spot and the other over the one in front. Miss X. was for two or three months much relieved by this, and grew better when a tonic mixture of iron, quinine and strychnia was given. The treatment was interrupted for a short time by a slight attack of acute articular rheumatism in the left foot and ankle. This yielded readily to salicylates, but returned in a less degree once or twice afterward. For a time cannabis indica tincture at night helped her to sleep, but did no permanent good.

Throughout a summer in the country her condition varied, but in October she was decidedly worse—more pain, more mental and physical disability, and, finally, repeated violent neuralgic headaches. The fact that there might be a pressure on a nerve, and possibly on the bowel, from the cicatrix of the old wound, again occurred to me. There was possibly, also, nephritic trouble suspected. In order to determine the facts, a careful examination under ether was advised.

Early in October, 1887, with the assistance of Dr. J. K. Mitchell, I etherized and examined Miss X. with great care. I found the uterus small, the internal measurements $2\frac{1}{4}$ inches; normal position; freely movable; the posterior wall somewhat thickened. On each side of the uterus a distinct tumor was found about the size of an English walnut. That upon the left side was movable independently of the uterus, and was thought to be the knobbed end of the stump resulting from the previous operation by Dr. Goodell. That upon the right side moved strictly with the uterus and was thought to be a uterine myoma. No other lesion was found in the pelvis. There was nothing detectable in the abdomen in connection with the left kidney, in front of and behind which the chief pain was complained of.

In view of the extremely wretched condition of the patient an exploratory operation was advised.

Operation November 9, 1887, Drs. J. K. Mitchell and W. J. Taylor assisting. An incision was made in the middle line, 5 inches in length, from the pubes upward. As soon as the peritoneal cavity was opened the uterus came into view and the two tumors above described were immediately recognized. They were so intimately incorporated with the body of the uterus that it seemed hopeless to attempt to remove them separately. In view, also, of the other additional myomata now discovered, and described later with the specimen, it seemed to be the more unwise to leave the uterus in place; accordingly, a Kocher's *serre-neud* was applied to the cervix, and the body of the uterus, with its attached tumors, after separation from the peritoneum, was removed by the scissors, the lateral attachments having been first ligated. The peritoneum was now stitched over the stump. Before removing the uterus a careful search had been made in the left hypochondrium, but nothing abnormal was found. The abdominal wound was now closed, first by a continuous suture to the peritoneum, and next by a row of stitches passing through the rest of the abdominal wall. The clamp was separated from the skin by small pads of sublimate dressing on each side, and a large sublimate dressing and a flannel binder were applied.

Dr. George Dock kindly examined the specimen, and reported as follows:

The specimen consists of the body of the uterus with 3.5 cm. of the right Fallopian tube and corresponding parts of the round and the broad ligaments, and 1 cm. of the left Fallopian tube, the round and the broad ligaments on that side being cut off close to the uterus and the tumors described below. The remains of the ovarian ligaments cannot be made out.

The fundus is of average size (nullipara), and appears to be cut off just below the internal os. The anterior surface is of normal curve. About the middle of the right border is a subserous fibromyoma, the size of a small bean. The posterior surface bulges excessively, the projection being due to the presence of a mural fibroid tumor which makes up most of the bulk of that part of the organ. The cavity of the uterus (fundus) is flat from before backward, and is triangular in outline, the opening of the tubes being in the two upper angles, the os internum in the lower. The sides of the angles measure: right, 27 mm.; left, 22 mm.; upper, 25 mm. The right upper angle is at a higher level than the left, the wall of the uterus being relatively thinner on that side. The surface of the cavity is smooth, and presents three small polypoid growths, two on the anterior, one on the posterior surface. The anterior wall is 8 mm. in thickness, the posterior 2 cm.

The tubes show nothing abnormal. To the right of the fundus in front of its transverse axis, and 1 cm. below the level of the insertion of the round ligament, is a tumor the size of a walnut ($36 \times 26 \times 26$ mm.). It lies in the angle formed by the broad ligament and the uterus, close to the latter, being separated by loose connective tissue and blood-vessels. It is covered by peritoneum, the greater part of which is that forming the anterior fold of the broad ligament.

The surface of this tumor is irregular. On section

it is hard, creaks under the knife, the cut surface is dark gray in color. Around the periphery are whitish fibrous masses and extreme calcification.

Microscopic examination of this growth shows it to be a myoma which has undergone partial necrosis, with pigmentation and calcification.

To the left of the fundus, behind the transverse axis, is another tumor, slightly smaller than the one just mentioned ($33 \times 26 \times 28$ mm.). Its upper surface is on a level with the fundus. Its nodular surface is covered with peritoneum, and it is separated from the uterus at a distance of 5 mm. by loose connective tissue in which lie two smaller tumors. On section it shows a lobular structure of firm white tissue (fibromyoma). In the upper part are masses of hard, calcareous matter (calcium carbonate). The two smaller tumors in the connective tissue are myomata.

For the next three days the patient complained greatly of pain, which was relieved by considerable doses of morphia. It should, however, here be stated that she bore pain badly. Her highest temperature was 99.7° F., and the normal was reached at the end of the third day. At this time, of her own accord, she declined any further morphia. The catheter had to be used for the first three days. With the exception of a rather obstinate constipation, which caused considerable abdominal pain and sleeplessness, which last was relieved by cannabis indica, her later history was uneventful, saving in one particular. The wire was tightened to the utmost limit in the course of the week after the operation, but the stump did not slough nor did the clamp become loose. As the clamp was producing ulceration of the skin, it was removed December 2. The wound, at this time, was reduced to a tubular sinus leading down to the stump. The last slough from the stump did not come away until Dec. 26; wound completely healed Jan. 6, 1888.

Since that date the patient has been absolutely well, physically and mentally. She eats and sleeps well, and takes active exercise with more satisfaction than at any time during the last twelve years; in fact, she is thoroughly restored to good health.

To complete her history, I will add the examination of her eyes by Dr. De Schweinitz: "Oval discs, rather too gray; retinal haze, both venous and arterial; lymph sheaths distended. This low grade of retinal disturbance is, I think, purely accommodative. There is a high degree of insufficiency of the internal recti." He prescribed the proper glasses.

REMARKS.—The removal of the ovaries by Dr. Goodell, which was done *per vaginam*, was one of the earliest of such operations done in this country. It reflects no little credit upon his skill that, in so contracted a vagina, he was able so successfully to remove the ovaries. Although this operation relieved her temporarily from pain, it proved of no permanent benefit. Her pains returned and, though located differently, grew worse and worse, so that, finally, all mental exertion, and all physical exertion as well, became greatly hampered. In fact, writing, which was her vocation, became impossible. She was willing to undergo any operation whatsoever which held out any chance of relief. She preferred to die rather than to live in such wretchedness.

The diagnosis was very obscure. What the meaning of the pain in the hypochondrium was, I could only surmise. The two tumors on each side of the uterus were believed to be, one a uterine myoma, and the other an enlargement on the stump following Dr. Goodell's operation.

An examination of the specimen shows, as to the first, that I was right. But no enlargement had taken place on the pedicle on the left side; the tumor being one of a number of myomata developed in connection with the uterus. Its situation at the cornu uteri very naturally misled me.

NO other operation than hysterectomy would, I think, have been advisable. Its performance was easy, and its results have been perfect.

Why the removal of the uterus, with its attached myomata, should get rid of pain in the hypochondrium, I am unable to say. To say that it was reflex pain is simply to express our ignorance in different words. Certain it is, however, that the removal of the entire internal organs of generation has been followed with the happiest results, whereas the removal of the ovaries alone gave but little relief.

I have deemed it important to report the case, in consequence of the recent question as to the results of complete and incomplete removal of the tubes with the possibility of the development of tumors on the stumps after incomplete removal of the tubes. My first impression, upon examining the specimen itself, was that the tumors were such knobby stumps, but after section and microscopic examination by Dr. Dock, this impression was seen to be erroneous.

A CASE OF HÆMOTHORAX FOLLOWING AN INCISED WOUND OF THE THORACIC WALL.

Read before the Chicago Medical Society, January 3, 1888,

BY NORVAL H. PIERCE, M.D.,

OF CHICAGO.

The patient whom I exhibit to you is 19 years old, of healthy parents, and was six months ago in good health.

On July 13, 1887, at 3.30 P.M., while cutting a piece of wood with the stick adjusted against his chest, he accidentally stabbed himself in the third intercostal space, half an inch to the left of the right parasternal line. The knife, which I hold in my hand, presents a sharp blade two inches in length, and half an inch in breadth. After the accident he walked to a neighboring surgery, thinking the wounds of little consequence; but when he arrived the loss of blood externally was sufficient to saturate his clothes, and caused syncope.

The doctor prognosticated death in a few hours, and summoned the patrol wagon. At 7 P.M., or $3\frac{1}{2}$ hours after the stabbing, I was summoned. He had received no treatment up to this time. I found the man in the condition of one who has sustained a very serious loss of blood—pale features, pinched, eyes sunken, and pupils widely dilated, surface cold and clammy, impaired hearing, pulse nearly imperceptible and very rapid, respiration sighing. There was very slight external bleeding at the wound, which

was about an inch in length. From an inch above the sternum to the lower border of the liver the right side was dull, but at this time the liver was not displaced. No blood was expectorated. I closed the wound antiseptically, ordered an ice-bag for the chest, warm bottles to the lower extremities, head lowered, whisky, half ounce every forty-five minutes, together with ergot, very little liquids, and absolute rest.

For several days after this his life hung in the balance. The pulse improved gradually, but the anæmia persisted, dyspnoea arose, together with great restlessness and troublesome insomnia, and the right pleural cavity remained flat on percussion, the lower border of the liver gradually descended and the heart was displaced to the left, indicating that the hæmorrhage was slowly progressing. At this time the advisability of enlarging the wound and taking up the bleeding vessel, or searing the lung with Paquelin's cautery, was entertained. But such a procedure entailed great risk and no small amount of uncertainty, the location of the bleeding point being unsettled. These facts, together with that of the patient holding his own, even in a low condition, deterred operating.

Because of increasing dyspnoea I consulted with Dr. Fenger as to the advisability of aspirating, under the existing circumstances, and on July 27 a gallon of dark colored blood was drawn away. This did not cause the dullness over the right thoracic area to disappear, but relieved the difficult breathing and lessened the restlessness and insomnia.

On August 20 I again aspirated, the lower border of the liver being within an inch of the iliac crest. Another gallon was drawn away. Under the microscope the white corpuscles were not greatly increased. Up to this time the temperature had ranged from 100° to 101° F. Afterwards it fell to normal once or twice, but generally the thermometer registered 100° F.

On September 5 diarrhoea set in, and lasted two or three days. Cough developed soon after, with very offensive expectoration. The liver dullness was gradually descending and extreme dyspnoea began. As the fluid in the pleural cavity now contained a marked increase in white corpuscles, I decided to perform the radical operation of empyema. On September 23 this was attempted. At this time there was a marked lowering of his general condition. At the time of the incision I purposed removing one or more ribs, but on account of the alarming manner in which he took the ether we thought it best to be as expeditious as possible. The tissues of the seventh intercostal were therefore simply incised, about a gallon of fluid allowed to escape, and the opening plugged with iodoform gauze. At the end the patient was in a state of collapse, brought on, I believe, by the too sudden escape of the fluid. He rallied, however, and the next day a tube was inserted and the cavity washed with a saturated solution of boracic acid at 100° F., which was repeated every second day thereafter. Fever and cough disappeared on the second day. The washings grew less and less colored, and in a few days the tube was removed.

The case sets forth not so much the innate goodness of conservative surgery, as it does the great tolerance of the thoracic cavity of effusions nearly if not quite equal to that of the abdomen. It also shows what a great quantity of blood may be lost without death, over three gallons being taken away in as many tempos. It likewise shows that the wound from which such a hæmorrhage could issue is capable of spontaneous arrest.

As regards the place for the incision, I would say the seventh intercostal space is too low, as after the first week the movements of the diaphragm interfered with the drainage tube.

As you may see, this slight cut an inch in length, with its attendant disasters, has left its mark. The right shoulder is depressed one inch. The external circumference of the right side is less than that of the left.

MEDICAL PROGRESS.

MEDIATE AUSCULTATION.—DR. JAMES K. CROOK says: I am not in favor of a multiplication of instruments in the practice of our art. We should make it our aim to be enabled to employ the implements with which nature has provided us in as extended a field as possible, as they are always at hand and ready for use. The artificial pleximeter and hammer, for example, I would discard entirely, as they are in nowise superior, and in some respects inferior, to the fingers of the two hands. But we have in the stethoscope a useful and, in my opinion, oftentimes an indispensable aid in diagnosis; and I would urge every one who proposes to treat diseases of the thoracic viscera to supply himself with one.

The binaural stethoscope has seemed to me to possess the following advantages: 1. It is far more convenient than the uniaural instrument, as we can employ it while standing or sitting erect in a natural and unconstrained position. 2. As the chest-piece is immediately in front of the face, we may keep it under constant observation and shift its position from point to point with the greatest facility. 3. By directing the patient to hold the distal extremity of the instrument between his fingers, we may have the free use of both hands for manipulation, as in performing auscultatory percussion, etc. 4. By closing both ears it excludes all foreign noises. For the foregoing reasons I invariably employ this instrument, and recommend it to students of physical diagnosis. Discretion should be used in the selection of a stethoscope. I fancy that many of the objections to the Camman instrument have arisen from the fact that the instrument employed was not at all suited to the auscultator's ears. Always see that the aural extremities of the instrument are arched to correspond with the external auditory canal. Do not have the ear-pieces too large, or, on the other hand, too small to fit the meatus of the ear. The spring or rubber band which connects the ear-pieces should be just tight enough to allow the ear tips to adapt themselves

without discomfort to the ear. Different heads are of different diameters, and an instrument which would suit one would perhaps be totally unfit for another. See that your stethoscope is supplied with three chest-pieces—a narrow, hard rubber piece for cardiac auscultation, a wide-brimmed piece, also of hard rubber, for the lungs, and a soft rubber piece, which has an occasional application in very thin patients with many bony prominences.

Personally, I find the stethoscope of special importance in the following cases:

1. In auscultation of the veins and arteries of the neck. The adventitious sounds produced in these vessels, as, for example, in chlorosis, are often very circumscribed, sometimes being limited to a small space on one side of the neck. I have been able to detect these sounds and to map out their area with the stethoscope after they had altogether escaped the attention of the unaided ear. In auscultating this region, direct the patient to cease breathing temporarily, as the respiratory sounds may give rise to confusion, and do not make too much pressure over the large arteries, as it is sometimes possible to generate an artificial murmur in this way. The stethoscope is also of occasional service in making out and locating obstructions in the larynx and trachea.

2. In auscultation of the heart. A cardiac murmur can be heard with great distinctness by the unaided ear; but I believe it to be well-nigh impossible in many cases to locate it or trace it to its point of origin by this means. It often happens that two or more murmurs are present at the same time in the heart, and it requires the nicest scrutiny to analyze them and refer them to their points of development. In immediate auscultation, the entire side of the head comes in contact with, and receives the impact of, the cardiac impulse as well as the ear. There can be no doubt that the angle of the jaw, the temple, and the zygomatic process may serve as conductors of sound, so that in immediate auscultation the sounds heard correspond, not to a space as large as the ear, but as large as the side of the head. This view was advanced by Laennec, and has not been concurred in by many subsequent observers, but experience leads me to believe in its correctness. Sometimes, also, the heart is acting so irregularly that we cannot even distinguish the systolic sound (the cardinal point in cardiac examinations) by auscultation. In using the stethoscope, however, we have the præcordial area directly before the eye, and we can thus often see the impulse of the heart against the chest, which corresponds in rhythm with the first sound. In females, aside from the question of decorum, it is frequently almost a mechanical impossibility to adapt the ear accurately to certain portions of the præcordial region. Imagine, for example, the difficulty of applying the ear to the mitral area of a female with a largely developed pendulous breast. We cannot avoid using the stethoscope here if we wish to make anything like an accurate diagnosis.

3. In determining the size, and sometimes the number, of pulmonary cavities. By a careful adjustment of the chest-piece (the narrow one should generally be used here), we can often arrive at a very fair idea

of the size of excavations in the lungs and sometimes even of their number. Auscultatory percussion is useful in such cases. The patient may be directed to hold the chest piece *in situ*, which leaves both hands of the auscultator free. Percussion may then be made in the usual manner with a radius of half an inch or an inch from the rim of the stethoscope. By practice, the shades of difference in the percussion note may be appreciated with far greater distinctness by this means than through the medium of the ear. I feel assured that all who give this method a fair trial will find it far superior to the old-fashioned method of Drs. Camman and Clark with the one-ear wooden percussion stethoscope.

In addition to the foregoing you will sometimes find other conditions in which the stethoscope will be useful; as, for example, in skin diseases and in contagious diseases generally, in which you may have occasion to auscultate the lungs or heart. The advantage of this instrument in an examination for the foetal heart sounds needs no urging.

Except as indicated, I seldom use the stethoscope for pulmonary auscultation. It is of little special use in examining the posterior aspect of the thorax, for the reason that the physical signs of disease in this region, as, for example, in bronchitis, emphysema, asthma, pneumonia, etc., are not apt to be circumscribed, and the unaided ear has the advantage of being more rapid. This is a point of special importance in weak and debilitated subjects, whom we frequently have to support in bed while this region is being examined.—*The Post-Graduate*, January, 1888.

TREATMENT OF GONORRHOEA BY ANTROPHORES.—DR. HUGO LOHNSTEIN, of Professor Zuelzer's polyclinic in Berlin, has found, as the result of observations on ninety-three cases, that gonorrhœa, both in its acute and chronic form, usually yields more readily to systematic treatment by a kind of medicated soluble bougies called *antrophores* than to other methods. These antrophores are made by Herr Stephan, a pharmacist in Treuen, Saxony, and consist of a nickel-plated metallic spiral containing a soft medicated material, the basis of which is gelatine and glycerin—the same kind of thing, in fact, as the hektograph and other "graph" compositions are made of. Before the introduction of the bougie the urethra is well syringed out by a Zuelzer's apparatus with a 2 per cent. solution of boric acid. Regarding this Dr. Lohnstein remarks that the mere passing of urine by the patient is quite insufficient to cleanse the passage from secretion, as anyone may easily convince himself by an examination with the endoscope. As a rule, a single bougie is sufficient during twenty-four hours. Indeed, when the introduction was repeated several times a day no better result was obtained but, on the contrary, the urethra appeared to be irritated by the instrument. These bougies must be differently applied in acute and chronic cases. In an acute gonorrhœa, where the prostatic portion of the urethra is not affected, the bougie should not be introduced into it, the surgeon being able to tell when the prostate is reached by the

greater resistance caused by the circular muscular fibres. In chronic gleet, where the prostatic portion is affected, the bougie should be made to enter it, but ought always to be kept from entering the bladder, which may bring on stranguy and even cystitis. The surgeon guards against this by asking the patient to tell him when he feels as if the instrument were in the bowel. He then knows that it is in the prostatic portion. The medicament mostly used by Dr. Lohrstein is thallin. For the first and second day bougies containing 2 per cent. of this substance are employed; even this strength occasionally produces a sensation of burning. On the third and subsequent days a bougie with 5 per cent. of thallin can usually be borne. It is not found advisable to allow patients to introduce the bougies themselves, for they are liable to set up hæmorrhage and to push the instrument into the bladder. In an acute case the thick secretion is usually changed by the third day into a thinner and clearer fluid; during the next few days the quantity of this gradually diminishes, and the secretion has generally entirely ceased in from eight to fourteen days' treatment. Complications such as are produced by injections very rarely occurred; epididymitis never; cystitis in two cases only, and in these it was probably due to faulty introduction of the bougies. Several cases were cured that had resisted other measures. The most difficult class of cases to treat is, of course, the chronic form. Here it was often found that, though the secretion could be greatly reduced, any attempt to lengthen the intervals of the introduction of the bougies was liable to be followed by a return to the original condition. Where the prostate and its ejaculatory ducts are affected, it is often necessary to have recourse to bougies of different kinds—*e.g.*, zinc, tannin, rhatany, nitrate of silver, quinine, or sulpho-ichthyolate of ammonium. Of course, where, instead of the mucous membrane generally being inflamed, there is a small ulcerated patch, these bougies are useless, and the endoscope must be employed as a guide to special local treatment.—*The Lancet*, March 24, 1888.

ACETIC ACID AND STRYCHNINE AS AN ECBOLIC.—MR. G. S. MAHOMED, of Bournemouth, says:

Since Dr. Grigg called attention to the value of vinegar as ecbolic, I have frequently used it for that purpose. And I have also found that four drops of the strong acetic acid (representing nearly half a drachm of vinegar) combined with strychnine has been successful in bringing about contractions of the uterus after ergot had failed. In one noteworthy case where in a very weak and anæmic woman the pains, after continuing feebly for a day or two, seemed to be leaving her, and ergot had been exhibited (the waters having broken), I found acetic acid and strychnine produce sharp and effectual pains.

The same thought, therefore, occurred to me as to Dr. Francis, of the possibly good results of combining it with ergot, and, in addition, observing that acetic acid could extract the active principle from colchicum and ipecacuanha, I asked Messrs. Corbyn to make a preparation of ergot, using acetic acid as

a menstruum, with a standard surplus of free acid. In a short time I received from them two samples, one of ergot extracted by acetic acid, of which a fluid drachm represented 60 grains of ergot with ten minims of free acid; the other, an alcoholic extract of ergot, which also represented 60 grains of ergot and 10 minims of free acid in each drachm. Both preparations had the color of the ordinary extracts, but the acetic acid frothed when shaken, which, of course, the alcoholic extract did not do. The acetic acid process should be more economical than the spirit method.

In a case where there was retained discharge after labor I gave some of this extract, and when the medicine was exhausted wrote a prescription for a similar dose of *B. P.* extract, to which I also added some bromide of potash, which is stated to aid the involution of the womb. The case was still unrelieved on my next visit, the uterus being obviously distended, so, after syringing out the cavity, I told them to have the medicine made up again, when the patient said, "Oh, sir, the medicine you gave me at first brought away something every time, but this medicine has done no good." This seems like a comparative test in favor of the acetic extract.

In a case of flooding, due to a large fibroid, I found that 20 minims injected deeply into the buttock gave rise to no local irritation, and there was no bleeding the night following, but there needs further experience before attributing this result to the drug. Ergotine discs did not always control it.—*British Medical Journal*, April 7, 1888.

DERMATOSES FOLLOWING MENTAL SHOCK.—DR. DUBOIS-HAYENIXTH, writing in *La Clinique*, adds some further instances of dermatoses following mental shock to the case of purpura hæmorrhagica recently described by Professor E. de Smet. 1. An unmarried lady who had been present when a man armed with a spade violently attacked another man was much upset by the sight, and did not regain her accustomed composure for some days. Three weeks later bullæ presented themselves on different parts of the body, and before long the entire cutaneous surface was covered with an eruption, having the characters of foliaceous pemphigus, accompanied by incessant pruritus. Arsenic, quinine, and other remedies exercised but little effect, or at least only a temporary one for the patient succumbed after four years in a state of marasmus. 2. A little girl of 10 was with difficulty saved from a burning house. From that time her appetite became bad, and she was haunted by constant nightmares and visions of houses on fire. A month afterwards a pemphigoid eruption made its appearance on the nose. It spread to the mouth and then disappeared. Shortly, however, it again manifested itself, covering a large part of the body. Iron and quinine appeared to be of but little service, for in nine months' time the eruption was as copious as ever. Two or three drops of Fowler's solution of arsenic three times a day soon worked a marvellous improvement, which it was evident was really due to the arsenic, for twice when the medicine was intermitted for a time the eruption returned. 3. A mar-

ried woman had a quarrel with her husband, who struck her on the cheek with a key. Four days afterwards an eruption came out on the wrists, the hands, and the feet. This eruption had the characters of Hebra's multiform exudative erythema, and was accompanied by intense itching. On the lips there was a vesicular, tumefied eruption, and patches on the tongue. The whole disappeared in about three weeks. —*Lancet*, April 14, 1888.

DETECTION OF COTTON SEED OIL IN OLIVE OIL.

—ERNEST MILLIAN, of Marseilles gives the following as a ready method of detecting cotton-seed oil in olive oil: It is based on the power of reducing the fatty acids of cotton-seed oil. In a porcelain dish holding about 1000 cc., heat 15 cc. of the oil to be examined, to 110° C. Then, the heat being continued, turn slowly into the oil a mixture of 15 cc. of a solution of caustic soda in distilled water, at 40° Baumé, and 15 cc. of alcohol at 92°. After the mass has become homogeneous by ebullition, indicating complete saponification, add drop by drop, so as not to cool the mass nor form lumps, about 500 cc. of distilled water. After boiling for a few minutes the fatty acid may be separated by means of a 1:10 solution of pure sulphuric acid. When the separation is complete, and the sulphuric acid is slightly in excess, collect 5 cc. of the fatty acids with a silver spoon, and place in a test-tube—one about 3 cm. in diameter and 12 cm. long. Now add 20 cc. of alcohol at 92°, and heat slightly on a water-bath to dissolve the fatty acids. These being dissolved, pour in 2 cc. of a solution of pure nitrate of silver (30 grams to 100 cc. of distilled water), replace the tube on the water-bath, and heat until about a third of the mass is evaporated; take the test-tube from the bath, and the operation is over.

Whatever be the source of olive oil its fatty acids remain unaltered if the oil is pure; if, on the contrary, the oil contain cotton-seed oil, even as little as 1 per cent., there is a reduction, and the metallic silver set free gives a black color to the fatty acids of the mixture as they rise to the surface. —*Nouveaux Remèdes*, No. 5, 1888.

PERCHLORIDE OF IRON AND MILK IN DIPHTHERIA.

—M. MOHAMMED BEN-NEKKACH, of Inkermann, reported to the Association Française pour l'Avancement des Sciences on March 30, that he had treated 21 patients with diphtheria with perchloride of iron and milk, with only one death, in the case of an infant six months old. Among the other patients were two adults. All the patients were treated from the beginning of the disease, before the period of asphyxia. Independently of the 21 there were six other patients, that could not be treated properly on account of indolence, or in which the treatment was not properly carried out, or because treatment was begun too late.

In all the cases that recovered, and most of them were severe, the iron was given in doses of 25 to 30 gts. in a glass of water (the solution being fresh for each dose). The quantity of milk given was a litre a day. As adjuvants were prescribed emetics and

painting the pharynx three times a day with the iron. —*Semaine Médicale*, April 4, 1888.

ACETOPHENIDINE.—M. GUERORGUEWSKY has employed acetophenidine instead of antipyrin. It is a crystalline grey powder, insipid and inodorous, derived from phenol; it is soluble only in 20 parts of alcohol, and is eliminated by the urine, wherein it can be detected by the red coloration with perchloride of iron. In typhoid fever, tuberculosis, erysipelas and pneumonia, in doses of from 15 to 30 centigrams, he found it to act as an antipyretic in from twenty to forty minutes after injection; the pulse and respiration diminishing in frequency, and sweating being induced. It also relieved pain, but doses of 50 or 60 centigrams are required to effect this end, as in migraine, cephalalgia, and tabetic pains. It never upset the stomach, or modified any of the other functions of the body; in this respect it claims to be superior to antipyrin. —*The Lancet*, March 24, 1888.

PERRO'S METHOD OF REDUCING STRANGULATED INGUINAL HERNIA.—G. S. PERRO uses the following method: After the pelvis has been raised on a pillow, and the thigh flexed and abducted, the operator grasps the scrotum and the hernial tumor, bends it slightly against the wall of the abdomen, and presses upon it in such a way that the index finger of the right hand is carried into the inguinal canal, and in the direction of the horizontal ramus of the pubes by a turning and boring motion; in a short time the strangulated part slips back into the abdominal cavity, and the other part follows. By this method Perro has succeeded in reducing six cases of strangulated hernia, after his colleagues had spent from twelve to thirty hours in vain attempts at reduction. —*Centralblatt für Chirurgie*, No. 12, 1888.

ACETANILIDE-MONOBROMO.—MESSRS. BURGUYNE, BURRIDGES & Co., have prepared a combination of antifebrile or acetanilide with bromine, which it is suggested may prove useful in facial neuralgia when the pains in the head are linked to nerve alterations; also in rheumatic, muscular, and articular pains. The name given to the compound is acetanilide-monobromo, and its formula is $(C_6H_5BrN < \begin{smallmatrix} CO_2CH_3 \\ H \end{smallmatrix})$. —*Lancet*, April 14, 1888.

INFUSION OF DIGITALIS IN PNEUMONIA.—PROF. PETRUSCO, of Bucharest, reports the very successful treatment of 142 cases of pneumonia by large doses of the infusion of digitalis—from one to two drams of the leaves in infusion in the twenty-four hours. In no case were any evil effects from these large doses observed. While it does not appear that the disease was materially shortened, the mortality was much below the average—the death-rate being only one per cent. —*Weekly Med. Review*, April 21, 1888.

A PASTE FOR PEMPHIGUS.—UNNA recommends a paste made of equal parts of linseed oil, lime-water, oxide of zinc, and chalk, which is said to work admirably in drying up the new blebs, and preventing their return.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MAY 12, 1888.

THE PRESIDENT'S ADDRESS.

The able Address on "The Mission of the American Medical Association," delivered by PRESIDENT GARNETT, on Tuesday, should be read carefully, and especially by the teachers in those medical schools that have neither requirements for admission to their classes, nor systematic graded courses of instruction. The opinion that students of medicine must have a good preliminary education before entering a medical school, and that public interest, and the welfare of the individual student as well as of the profession as a whole demand systematic graded courses of instruction is becoming more general each year, and will bear good fruit when the colleges that are still out of line find that it is to their interest to put up the bars both for entrance and for graduation.

It is useless to enter into any argument with those that assert that the American Medical Association has accomplished nothing in the way of medical reform. The Association has always stood in the van of medical reform and high medical education, and high requirements for admission to medical study. Obviously, however, not being a legislative or judiciary or police body it could go no farther than the making of wise suggestions—it has no compelling power over the colleges and teachers whose chief aim is the students' fees, regardless of whether they be qualified by nature or education for entering a noble profession. Under our system of government the compelling and police powers in such matters must be vested in the medical boards created by the indi-

vidual States. The effect of the passage of medical practice acts and the creation of boards of health and of medical examiners by different States has been felt in a large number of colleges requiring preliminary education for the study of medicine, longer terms of medical study, and graded courses have increased markedly during the last six or seven years, and the good work still goes on. And even the colleges that had not sufficient regard for their reputation and for the welfare of the profession to raise their requirements, have, in some instances, shown that they recognized the justice of the requirements of State boards by specious and evasive announcements of new requirements—seemingly afraid that they would lose patronage, on one hand, if proper requirements were made, and that, on the other hand, some of their graduates would fail of admission to practice in certain States if improper requirements were shown to exist.

Dr. Garnett has a few words for the colleges that claim that the colleges should not be held responsible for graduating illiterate and incompetent students; that preceptors are supposed to send to the colleges only such students as are fitted for the study of medicine; and he is justly suspicious of the colleges that simply announce that certificates of educational acquirements are required of all students before matriculating. And he might have added some words regarding those institutions that make some such announcement as the following: Certain States having passed laws requiring preliminary examinations, in order that students from this college may not be embarrassed the Faculty will grant preliminary examinations to such as intend to practice in the States requiring such examinations. Can such announcements be regarded otherwise than as an evasion of the regulations of certain State boards?

The propositions suggested by the President do not require elaboration nor discussion. While the second may at first seem harsh and impracticable, it is at least as fair for the one as for another.

NE SUTOR ULTRA CREDIDAM.

The most important work in midwifery performed by the Chicago Gynecological Society, during the brief period of its active existence, has consisted in the frequent enunciation of the Semmelweiss doctrine of the nature and prevention of puerperal fever, and the repeated discussion of the method of abdominal palpation in obstetrical diagnosis. The Society is to be congratulated upon the faithful execution of a

duty of vital significance both to the profession and to the community. On general principles, one would naturally have thought that the numerous essays on both subjects were works of supererogation and unworthy of presentation before a body claiming to be constituted by specially qualified practitioners. So much of the same tenor has been ably and authoritatively written upon both topics within recent years. Moreover, absolute unanimity of all opinion entitled to highest consideration has existed for a long period.

But the outspoken skepticism, both as to the nature of puerperal fever, as expounded by Semmelweiss, and as to the value of abdominal palpation, displayed in the discussion of these essays, demonstrates their timely character, while it also suggests the melancholy fact that medical men do not always read so much, nor so attentively, as might reasonably be expected of members of a learned profession [with a magnificent literature.

It was urged by a very small minority of the members of the Society that formal indorsement of the view, that vaginal examination of the parturient woman ought to be discouraged, should be withheld upon the ground of possible medico-legal complication; that papers suggesting the notion of the responsibility of the physician or nurse in case of puerperal fever, must be suppressed for the same reason—the danger of suits for malpractice.

Here we have verily an old foe not even with a new face—an application of the doctrine of expediency at once curious and amusing, if the importance of the subject did not render the matter pathetic. The vital moment of the issue is sufficient apology for making this local and relatively trivial protest the text of an editorial note.

It is perhaps needless to say that the expediency of the Semmelweiss doctrine is wholly irrelevant to the discussion. The truth or falsity of the theory only concerns us. In passing, it may be remarked that the plea of self-interest has never been very popular among medical men—probably on account of the native nobility of the science; possibly, also, because it is almost always the sign of a weak cause. Of course, the belief that every case of puerperal fever arises from the resorption of decomposing animal organic matter through lesions in the genital tract, and that the *matrices peccans* is invariably introduced from without, throws tremendous responsibility upon physician and nurse. In the concrete case of puerperal fever, provided the control of the patient has been entirely given up to physician and nurse, one or other—or both—are responsible for the disease. The woman is either infected directly by

contact through the fingers, instruments, and the like, or indirectly by the cocci within the vagina, on the skin surface, or in the clothing. The doctrine is undoubtedly a harsh and unpleasant one for the attendants, and it is only "the hard evidence of facts, *la brutalité des faits*, which forces us to accept this theory." Our predecessors "were helpless in the prevention of puerperal fever, but they never had a sleepless night from remorse." The Semmelweiss theory, supported by "irresistible facts contributed by physicians in all parts of the world," constitutes an integral portion of medical science, and is no longer a legitimate subject for discussion. The statistics of Leopold, Freund, Crédé, Carl Braun, Tarnier, Richardson, Garrigues, are interesting and valuable, but they are not necessary to the establishment of the fact. That was fully accomplished long since.

Is it not, then, remarkable that the *Medical Standard*, of October, 1887, takes up the gauntlet in an editorial entitled "Medico-legal Dangers from too Positive Assertions." From the general proposition, "Physicians cannot be too careful in stating a favorite hypothesis as an established truth of science," one cannot withhold his assent, although one may fail to perceive the necessity for the repetition of a trite platitude. But in the case in question, the plea of self-interest was urged against the indorsement—entirely superfluous, it is true—by the Society of "an established truth of science" and not of "a favorite hypothesis." The writer of the note was unhappy in the selection of his illustration—that is perfectly plain. Was he also ignorant of the present state of our knowledge respecting puerperal fever? If the note is the expression of irresponsible opinion, as it seems to be, we beg to suggest the fitness of imitating the sobriety of the French cobbler: "A Parisian bootmaker," the chronicle tells us, "on being asked his opinion of the respective merits of Turenne and the Grand Condé on the same stricken field, replied: 'I made the boots of both gentlemen; as far as boots go there is not a pin to choose between them; beyond that I cannot go, for it lies outside of my profession.'"

Nec sutor ultra crepidam.

THEINE AS ANALGESIC.

A contribution to the therapeutics of pain by an intelligent worker may be always welcomed as a step forwards in the treatment of disease. Such is a little book that has recently appeared from the well-known pen of DR. THOMAS J. MAVS, of Philadelphia:

"A physiological Contribution to the Therapeutics of Pain," as he calls it, being a reprint of a continued article that appeared in the *Polyclinic*, from last September to February, 1888. Dr. Mays' first contribution to the therapeutic action of theine appeared two years and a half ago, at which time he thought that what was sold as theine was actually made from tea. Since that time he has obtained pure specimens, and revised all his former work on the subject.

Theine and caffeine are alike in first affecting the anterior extremities of frogs, and both diminish respiration and cause hyperæsthesia during the latter (later?) stage of the poisoning, although the super-sensitiveness is much more marked in theine than in caffeine. They differ in the following respects: Theine principally effects sensation, while caffeine does not; theine produces spontaneous spasms and convulsions, while caffeine does not until very late in the stage of poisoning; theine impairs the nasal reflex early in the poisoning process, while caffeine does not, if at all, until the very last stage; the lethal dose of theine is larger than that of caffeine. These differences are sufficient to show that theine and caffeine are not identical in physiological action, though chemists describe them as being the same chemically—which it is not at least fair to question until further analyses are made; for while it by no means follows that two isomeric substances have similar properties, it may be doubted if two isomeric, or even metameric bodies would have such different physiological actions. Of the purity of the caffeine and theine used by Dr. Mays, it is sufficient to say that precisely identical results were obtained from two separate manufactures of both alkaloids by Merck, of Darmstadt, and from specimens made by Mr. Wm. C. Harris, a Philadelphia chemist. This much by way of explanation of a number of supposed failures of theine in the hands of other physicians after the publication of Dr. Mays' first article.

The physiological action of theine on man, as deduced from a number of experiments by Dr. Mays, may be summed up as follows: Dose from .2 to .5 grain. Numbness of the arm and hand below the seat of injection—"a feeling as if the hand had been steeped in a solution of carbolic acid;" a feeling of coldness and an occasional disturbance of temperature of the member under its influence. A slight reduction in the pulse rate, and no intoxication of the brain. No impairment of motion. The anæsthesia begins in a very few minutes, and is much more marked in some individuals than in others. A relief to the sensation of fatigue. Temperature dis-

turbance not regular. In four cases in which the temperature was taken, the hand that showed the greatest depression of temperature was least anæsthetized. The psychic disturbances caused by deep injections in Dr. Castle's experiments upon himself (*Medical News*, Dec. 15, 1885) were probably caused by the introduction of the solution directly into a vessel, since Dr. Mays, even with five times the quantity used by Dr. Castle, has never observed any phenomena of the kind. It may be said, then that theine: 1. Has a special affinity for the nerves of sensation. 2. It produces anæsthesia when administered subcutaneously. 3. Its anæsthetic action is confined below the seat of its injection, *i.e.*, its influence extends from the centre to the periphery, and not in the opposite direction.

Its physiological action, then, shows that in theine we have an agent that paralyzes sensation without affecting motion, and that this effect is certain and without injury to any part of the body, even in large doses. According to Dr. Mays, in order to obtain the full effect of theine it is not necessary to inject it deeper than immediately below the skin, and Dr. Castle's experience with it shows that deep injections may cause unpleasant symptoms. Dr. Mays says that the analgesic action of the drug is very prompt, and when a single dose fails to act favorably, it is advisable to increase, even if this has to be done to a large extent—as much as gr. 2.5 or more. He has seen no prolonged irritation, and no inflammation at the site of injection, though there is some burning at first, which disappears in a few minutes, and is replaced by a marked area of anæsthesia. The drug is more soluble when prepared with benzoate of soda. A solution for hypodermatic use may be made of theine and sodium benzoate $\bar{a}\bar{a}$ 5j, sodium chloride gr. 8, distilled water $\bar{z}\bar{i}$; $\bar{m}\bar{6}$ contain gr. 0.5 of theine. Theine tablets for hypodermatic use are also made.

Theine is solely a pain reliever, but in cases of obstinate and protracted pain it must be aided by other drugs that improve the nutrition of the affected nerve, or that may remove the persisting diathesis. As regards the difference between theine and morphine, Dr. Mays sums it up as follows: When it is necessary to narcotize the centres innervation in order to relieve a given pain, then morphine is indicated; but when it is not necessary to do this, theine will accomplish the work safer, better, and more promptly than morphine. On general principles it may be said that morphine gives the best results in acute pain, while theine is most beneficial in chronic affections of the sensory nerves.

DISTILLERY-FED CATTLE IN CHICAGO.

For the second or third time the Mayor of Chicago now says that slop-feeding in Chicago must be discontinued, and he will have all the cattle sheds removed from the city limits. This decision is based upon the report recently made by an expert who was detailed to ascertain the amount and cause of pollution in the Chicago River. Strange to say, the head of the city government would not allow a reporter to see the expert's report. To use his chaste and elegant diction, "It's too tough to be printed. It is much worse than was expected." The *Tribune* suggests that the real reason for withholding the report is that it would furnish evidence for Peoria and other towns below Chicago on the Illinois River to use in the threatened suit against Chicago for not taking proper care of its sewage.

This distillery feeding of cattle, which has been carried on for a long time in direct violation of the law, has been connived at, and in fact allowed, because it is said: "It isn't profitable to our distilleries unless they can feed cattle." "The distilleries will have to make some arrangement to feed their slop or lose their profit. The result of the enforcing of the order will be to make them move their entire plants to some other point." Then so much the better for Chicago and the worse for the other point. If the Chicago brewers and distillers cannot make a handsome profit on the adulterated abomination they are selling to the public at an enormous advance on the cost of making, by all means let them move to some other point—or go into some honest business.

EDITORIAL NOTES.

DR. EMIL BESSELS, the well-known physician, naturalist, and arctic explorer, died of heart failure at Charfreitag, Stuttgart, on March 30, aged 40 years. Dr. Bessels was well-known in scientific circles in this country, having come to America in 1871 to undertake the scientific direction of the North Pole Expedition under Hall, on the *Polaris*. He wrote the "Physical Observations" of the narrative of the voyage of the *Polaris*. In 1876 he settled in Washington as Secretary of the Smithsonian Institution, until his house was burned, and he narrowly escaped with his life on Christmas Eve, 1885, when he returned to Europe and settled in Stuttgart, where he remained until his death.

THE USE OF VESICANTS.—WYSS, of Geneva, has published a veritable diatribe, in *Der Forschrift*, against the use of vesicants, asserting that the use of

them is a useless cruelty, and that he has never had any good effect from them in pneumonia, pleurisy, sciatica, and other affections; that they interfere with the patient's sleep, act disagreeably on the urinary organs, and cause obstinate eruptions, and that they increase the fever, and may affect the general condition of the patient unfavorably. That vesicants are abused in many cases there can be but little doubt, and there is scarcely less doubt that rubefacients or at most "flying blisters" would be of more service in many cases in which vesication is used. In so far as Wyss' experience with blisters in pneumonia are concerned, it is important to know in what stage of pneumonia they were used, since it is admitted that they are harmful in the inflammatory stage.

BICHLORIDE OF MERCURY IN TYPHOID FEVER.—GLASER, of Hamburg, gives the results of the use of bichloride of mercury solution, 1:4000 or 5000, in typhoid fever. The interest that attaches to his experiments is in the attempt to determine whether it is possible to kill the bacilli of typhoid fever—or cure the disease by antiseptics and germicides—without killing the patient. Glaser used the solution in 23 cases, and his mortality, 21 per cent., is sufficient to make anyone at least extremely cautious in using it in the future; and as there does not seem to have been any positive gain from its use there seems to be no reason for repeating the experiments. Certainly, his cases showed none of the improvement seen in the treatment by calomel, so much used by some distinguished German clinicians.

DR. MIDDLETON has, as was to be expected, been acquitted of the murder of a gypsy guide, who attempted to take his life in the cathedral of Cordova, Spain. It may be remembered that when at the top of the cathedral tower the man seized Dr. Middleton from behind, after having his stick wrested from him, the doctor drew a revolver he fortunately had with him, the first shot entered the gypsy's mouth, the second pierced his heart. The shots were fired at the assailant over the doctor's shoulder.

THE "WIENER KLINISCHE WOCHENSCHRIFT," the first number of which appeared on April 5, is to be published under the editorship of Dr. G. Riehl. It is more pleasing to the eye than most Continental journals.

A FACULTY OF MEDICINE FOR MARSEILLES.—There is a scheme on foot for elevating the present school of medicine of Marseilles to the rank of a Faculty, and adding to the school a chair of Bacteriology.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.

Eighteenth Annual Meeting, held in San Francisco, April 18, 19 and 20, 1888.

[Report furnished by the *Sacramento Medical Times*.]

FIRST DAY—WEDNESDAY, APRIL 18.

MORNING SESSION.

The Eighteenth Annual Meeting was held at B'nai Brith Hall. The Society being called to order by THE PRESIDENT, R. H. PLUMMER, M.D., of San Francisco.

C. G. KENYON, of San Francisco, on behalf of the resident members, extended a hearty address of welcome to the visitors from abroad. He alluded to the material advances which had been made in the State during the past year. He directed attention to the exhibition in connection with the meeting and dwelt upon the importance of the new feature.

THE PRESIDENT, R. H. PLUMMER, of San Francisco, then delivered the Annual Address. The following subjects were recommended for the consideration of the Society: In accordance with a bill introduced at the instigation of the State Board of Health at the last session of the Legislature, he advised that no body should be interred without a permit from a board of health, health officer or justice of the peace, upon a certificate from a legally qualified physician, the coroner, or, in default of this, the written statement of two reputable citizens. The permit or certificate to be duly recorded. In this connection he alluded to the necessity of the formation of local boards of health in the smaller towns and pointed out that no further legislation was needed as the supervisors have been armed with the necessary authority. The necessity for the establishment of a quarantine station at the Port of San Francisco was urged and the existing deficiencies pointed out, together with the present status of the measure now before Congress appropriating the necessary funds for this purpose. The importance of a State law compelling the vaccination of all children before entering the public schools was urged. At present several cities have ordinances providing for compulsory vaccination within their limits, but are constantly exposed to infection from abroad. A general enactment would make this protective measure universal. Regarding the existing law providing for the recording of births, marriages and deaths, which has frequently been mentioned as inoperative and impossible to enforce, he directed attention to sections 3075 and 3077 of the Political Code and sections 377 and 378 of the Penal Code, where adequate penalties were provided. The present condition of the Constitution and By-Laws of the Society was mentioned, and the advisability of appointing a committee to revise and codify the same was urged. The recent action of the Board of Examiners in raising the standard of qualification, and requiring a three years' graded course from every applicant for a license to practice

in this State was mentioned and the suggestion made that the Society heartily endorse the same. The necessity for a good primary education was dwelt on, and mention made of provisions in the bill now before the Society in which this had been provided for. The following committee was appointed to report on the recommendations contained in the President's address: C. E. Blake, W. W. Kerr, S. O. L. Potter, H. S. Orme and J. H. Parkinson.

AFTERNOON SESSION.

The Secretary, WM. M. LAWLOR, read the

REPORT OF THE BOARD OF EXAMINERS.

The number of meetings held during the year was 13; certificates granted, 265; duplicate certificates issued, 2; applications refused, 5. Amongst those receiving certificates were 37 graduates from California schools. The work of the Board was steadily increasing, the number of certificates issued being 59 in excess of the previous year.

DR. A. L. GIHON, on behalf of the

RUSH MONUMENT COMMITTEE,

made a statement of its object and purpose. He said: When we determined upon erecting this monument, it was resolved, as there were 90,000 physicians in the United States—there are now 100,000—to limit the subscriptions to one dollar, and we should at least get one-quarter of that number to subscribe. I am quite sure that out of the 100,000 physicians in the United States we will find a quarter, at least, who will give us a dollar, and that will build a handsome monument. A great many physicians wanted to give more, but we were satisfied that we would receive more funds than we needed.

Drs. Gihon, Tyrrell and W. P. Gibbons were appointed a committee to collect subscriptions from the Society.

The report of the *Committee on Mental Diseases and Medical Jurisprudence* was read by DR. W. W. MACFARLANE, of Agnew. The speaker alluded to the barbarous treatment to which the insane were formerly subjected. The insane in California were amply provided for. He believed that the feeble-minded and idiots should be treated in their own county hospitals, which would be more economical than sending them to the State asylums. More than 60 per cent. of patients in the asylums are of alien birth. There has been an average of 152 Chinamen, and a cost of \$22,000 each year. California is the only State having no Sunday law. To this much of our insanity, which depends on drunkenness, is due. He alluded to the prevalence of *feticide*, which he thought had much influence on mental diseases, in consequence of physical deterioration resulting from it. Mental and moral treatment had much to do with recovery. Here the number of inmates was so great that it was impossible to give them much attention. He deprecated the custom existing in this State, whereby the management of the asylums and the appointment of the officials was in the hands of boards of trustees, instead of being under the control of the superintendents.

DR. J. W. ROBERTSON, of Napa, in opening the discussion, said: The question, whether or not insanity is on the increase, had often been discussed. There was no doubt that the number of the insane had increased. When the insane asylums were first opened they were looked upon as jails. It was found that but little restraint need be employed. In the reception wards of the asylums were placed some of the most intelligent patients, who understood the rules of the institution and were quiet. Patients, on their way to the asylum, are frequently subjected to rough usage, and consequently arrive in an excited and exhausted condition, but on finding that they are surrounded by quiet and order they soon calm down. There was not a single straight jacket in Napa or a dozen patients under restraint. Chronic and acute cases should be kept apart. One violent patient would upset a whole ward. It was desirable that the insane should be sent to the asylums early, as under the influence of strict rule and hygienic measures they were invariably benefited. Theoretically there should be an asylum for every county. This, of course, was impracticable, but there ought to be an asylum for every congressional district. Regarding the question of increasing the number of physicians in the asylums—of the 1,400 cases in Napa, about 800 received very little medical treatment. In other States, where the staffs were numerous, the salaries were small. The best men were therefore not attainable, and there was no permanency. It required a year's training for a physician to be successful with the insane. He believed that the existing system was the best. The suggestion that there should be one law for the government of the State asylums was an excellent one. At Napa the Board had absolute control over the appointments and dismissals.

DR. W. H. MAVS, of Stockton, said that insanity was not more prevalent in this State than elsewhere. There were in Stockton 1,600 cases; in Napa 1,400. Estimating the population of the State at one million and a quarter, the rate would be one in four hundred—a very low percentage. In New York, the percentage was 1 in 352; Massachusetts, 1 in 362; Illinois, 1 in 345; Great Britain, 1 in 348. The profession should endeavor to remove the prevalent belief that this State had more than its share of insanity. In no State in the Union were the insane so closely sifted out. There seemed to be an intolerance of any form of mental disease, and all cases were promptly sent to the asylums. He believed that there was a crying need for more medical help. It was true that a large number of the inmates did not require medical treatment, but they required what was of more importance—care, employment, amusement and general surveillance. He was glad to learn that the asylum for the chronic insane would soon be opened.

DR. H. D. ROBERTSON, of Yreka, said that it frequently happened that patients were discharged before they were cured. He was glad to know that there would soon be more accommodations for the insane, and he hoped the physicians in charge of the asylums would then use a little more judgment and make an effort to hold these patients until they were cured.

DR. MAVS thought that if the speaker was present in the asylums for a few months he would modify his statement that the authorities were hasty in discharging patients. The question of discharging a patient really was, "Is he so insane that he needs to be retained there?" When patients recovered, to all intents and purposes, and when they became sane enough to be discharged there was no alternative other than to do so, even if they again became insane. Patients are said to have recovered from diseases, as pneumonia, but that did not guarantee that there should be no recurrence, and it was the same thing in mental diseases.

DR. GROVER, of Berkeley, said that the overcrowding of the asylums was partly due to the fact that what are called "insane criminals" are sent there. There should be a branch asylum attached to the State Prison at Folsom or San Quentin for such cases.

EVENING SESSION.

DR. W. E. TAYLOR, of San Francisco, read the report of the

COMMITTEE ON SURGERY.

He had selected the subject of *Operative Procedure in the Treatment of Internal Cancer*. He assumed the existence of the disease called cancer in its usual acceptance, and he confined himself solely to the carcinomata, and their treatment by cutting instruments. He questioned whether modern operative surgery had not passed the bounds of prudence. He did not think that an operation should be performed unless with some hope of cure. By this he implied a permanent recovery without further extension, and he did not accept the three-year limit or no recurrence within that period. He wished to sound a note of warning—that we should pause and well consider before performing operations of this class. He believed that operations for internal cancer would, in the future, be less frequently done than now. The difficulty of an early, and even a correct diagnosis of internal cancer was extreme. He cited Batlin in support of this position, that authority condemning too frequent interference. He characterized the results of some of these operations as ghastly—in one series, a total of 364 operations and 126 recoveries. The necessity of diagnosis was dwelt on and instances of "cancer" cured by appropriate treatment mentioned in this connection. The splendid results achieved in abdominal surgery encouraged these operations, but there was no comparison between operations for benign and malignant tumors. Complete removal in the one case was cure, in the other only a hope of ultimate recovery could be held out. In non-malignant disease, where life is threatened or great suffering is undergone, the surgeon is justified in operating. In malignant disease, it was unwise and unsurgical to use these facts as arguments in favor of operation. No matter what advances in operative technique had been made, the clinical fact remained that a cure was impossible until a specific remedy was found.

DR. T. W. HUNTINGTON, of Sacramento, in opening the discussion, said that he regretted that the

subject could not have been reviewed from a different standpoint from that adopted by the author. He was glad that a halt had been called to indiscriminate operations upon neoplasms, regardless of their end. It was true that some brilliant results had been obtained, and it had been claimed in consequence that the operations in all instances were justifiable. It had been said that the lawgivers of art were not always artists, and he was forced to admit that the lawgivers of surgery had not always proved to be surgeons. He believed that the ambitious operator, seeking the greatest good of the greatest number, had field enough and opportunity sufficient in which to achieve honor and the greatest amount of service to the human race. He wished to thank the author for the work he had done. He believed it would be of great service to the Society and to the profession.

DR. E. B. ROBERTSON, of Jackson, had operated in several cases of malignant disease. In each case the growth had been successfully removed, but after a variable period of time had returned. He therefore believed that where we are fortunate in one case and the patient recovers and continues to do well, that it is simply an error of diagnosis. We may put off the evil day, but there is no such thing as cure.

DR. L. C. LANE, of San Francisco, disagreed with Professor Taylor in the view which he had taken of the incurability of cancer. He was entirely satisfied that cancer was curable, and he was satisfied that he had cured it a number of times by operation. Since November 1876, he had operated 88 times. A number of the cases had been kept under observation. Many of them had died, but he could safely calculate that one-fifth were living. The great trouble was that the cases were not seen sufficiently early. From observation and study he was convinced that in a very large number of cases the trouble is at first purely local, and therefore curable by removal. There was a great prejudice against operation from the dissemination of the notion that the knife will not cure the disease, and it frequently happens that cases are not seen until too late. It was easy to talk and to give one's personal experience. He would, however, select one case, to show there could be no doubt as to the nature of the disease. In what might be termed a "cancer family"—the father and mother died of cancer; they were not operated on—a daughter had an unmistakable cancer of the mammary gland. An operation was performed on her nine years ago. She is, and has remained well ever since. A granddaughter also had the disease. Her breast was removed five years ago. There has been no recurrence. In these cases the operation had been performed early. A patient, who had been operated on twenty-five years ago for mammary cancer, and in whom the other breast was subsequently removed, is still living. With these facts before him he was compelled to disagree with Dr. Taylor. Billroth states that he has cured one-third of his cases, and Germans are very careful indeed of their diagnoses. A microscopic examination is invariably made. Personally he had always followed this rule.

DR. HUNTINGTON inquired if the speaker's experi-

ence warranted operations on deep structures, as in cancer of the uterus?

DR. LANE: I believe I was the first to perform that operation in the United States. Nearly all the cases were seen too late. They had been cauterized and portions of the neck had been removed in every case except two. I believe the operation is justifiable if we could get the case in time, but I should carefully select my case and would be guided by previous experience.

DR. W. F. MCNEITT, of San Francisco, said the statistics of removal of the uterus for malignant disease are much better in Europe than in this country. Martin has had marvellous results—his cures being about forty per cent. The secret of this is early diagnosis, for which the microscope is relied on. He did not think that an American surgeon could be found who would operate on this evidence alone. Enlargement, hæmorrhage, pain, and all the physical symptoms were deemed necessary. Then when an operation is performed the patient dies. The speaker had operated on a patient for cancer of the lip thirteen years ago, and he is now perfectly well. Four years ago he had removed a breast. The disease was well advanced. All the glands were removed. The patient is now perfectly well. He thought that more attention should be given to early diagnosis, and by that means we could expect to relieve more of our patients, and fully justify the operation.

DR. J. D. ARNOLD, of San Francisco, said that where the individual experience of surgeons would put them either on the radical or conservative side of the question, he believed that the true pathology of the disease should be made the touch-stone for operation. If the surgeon believed the disease to be systemic, operation was only justifiable for the relief of pain and prolongation of life. If, however, he believed that cancer was a purely local disease, and could become systemic through actual extension, his decision would depend on whether or not he could completely remove the diseased structures.

DR. CHARLOTTE B. BROWN, of San Francisco, thought that the refusal to operate often exercised a disastrous effect upon patients by confessing the hopelessness of these cases. She would operate even in the face of a large mortality, and she thought that other surgeons shared this feeling.

DR. C. CUSHING, of San Francisco, said that his personal experience was limited to malignant diseases affecting the uterus. He agreed with Dr. Arnold as to the main principle which should underlie operative procedure. In cancer of the uterus there were only two conditions which warranted active interference. One is that the disease shall be limited to the uterus not affecting the surrounding tissues. The other is where the disease has extended sufficiently to produce an amount of hæmorrhage and discharge, which seriously impairs the comfort and immediate health of the patient. Cases in which the surrounding tissues are involved, but without serious discharge, are not proper cases for operation. When the uterus was fixed it was unwarrantable to remove it. In the first place, it involved the danger of im-

mediate death. In the next, there was no such thing as a cure. The only possible justification for surgical interference is to gratify the woman in making her think that something is being done, and thus keeping her out of the hands of the quacks. He believed that these two propositions were sound. A portion of the growth should be subjected to microscopic examination. If this proved that it was cancerous, an operation was justified under the limitations that he had laid down. Outside of these, he believed that interference was not warranted.

DR. J. ROSENSTERN, of San Francisco, believed that the position as to the advisability of removing internal cancer in strict opposition to the removal of external cancer was an erroneous one. Why should we believe that cancer of the uterus would be more liable to affect the organism than diseases of the mammary gland? The real secret of success was early operation, and we should endeavor, where we can make a positive diagnosis, to have our patients submit to operation. Extirpation of the larynx had been mentioned, and it was true that in the statistics quoted by Dr. Taylor there was an alarming mortality; but if we look to the statistics of one operator, Eugene Hahn, we find that he has only two deaths following fifteen operations. Of these, two are now well—one seven and the other three years after operation. Without advocating operation, he thought that we ought to endeavor to improve our methods. We could not cure cancer, but we were certainly able, in many instances, to relieve intolerable suffering, and to prolong life with freedom from pain for many months.

DR. TAYLOR, in replying, said that he did not wish to be regarded as considering these operations unjustifiable. His object had been to call attention to indiscriminate operations for internal cancer, simply because consent was given, and because the patient may survive the operation. Operations on properly selected cases were justifiable. Notwithstanding what had been said he felt that true cancer involving an internal organ, was not curable by operation. He did not consider that operations for external cancer were unjustifiable. They were justifiable in many cases, with a view to both physical and mental relief. He questioned whether a microscopical examination was always correct, and doubted the competency of many in the use of this instrument. Investigators often found what they expected to find. The object of his paper was to call attention to indiscriminate operations; to ask for a reconsideration of the subject and greater care in the selection of cases.

SECOND DAY—THURSDAY, APRIL 19.

MORNING SESSION.

DR. I. E. OATMAN, of Sacramento, read the report of the Committee on Diseases of Women. He wished to notice particularly the subject of

ECLAMPSIA.

While albuminuria invariably accompanied eclampsia, its etiology was uncertain. He believed that if

pregnant women would place themselves under the care of a competent physician during gestation, eclampsia could in every case be averted. If convulsions appeared, they could be combated by narcotics; but these required to be continued in full doses to maintain the effect. In *veratrum viride*, in 10 \mathfrak{m} doses, an efficient remedy existed. Early and rapid delivery, under an anæsthetic if necessary, was indicated. Treatment should be continued after delivery to maintain that degree of relaxation in which convulsions never occur. He included in his paper infantile convulsions during severe fever or from injury and gastric disturbance. In these cases treatment must be directed to the removal of the cause.

DR. WASHINGTON AYER, of San Francisco, in the report on Public Hygiene and State Medicine, directed the attention of the Society to the subject of

EXPERT TESTIMONY IN CASES WHERE MENTAL DISEASE IS ADVANCED AS A PLEA OF DEFENSE.

The course pursued by the courts, where such pleas as emotional insanity are advanced, is nothing but a hippodrome of justice, and by this means the testimony is made to appeal so much to the sympathy of the jury that the ends of justice are more frequently defeated than served by it. In addition to this, it is an inducement for depraved persons to commit crime in the hope that such a plea will be advanced. The expert, although treated with courtesy while on the stand, is hampered by hypothetical questions, to which he is only allowed to answer yes or no; thus the jury is completely puzzled, while at the same time the value of the testimony, as an aid to arrive at a just verdict, is greatly impaired. To avoid such manifest injustice the defendant, in cases where such a plea has been advanced, should be examined by an expert committee of three, appointed for this purpose by the Governor of the State, whose report should constitute the only expert testimony in the case. Dr. Ayer also urged the separation of insane criminals from other insane patients, either by providing a distinct asylum or by segregating them into different wards.

DR. W. P. GIBBONS, of Alameda, inquired the number of insane who had been sent to the asylums from the State prisons, and whether they were liberated at the discretion of the authorities at the asylums?

DR. GROVER, of Berkeley, said: When a criminal is deemed insane by the legally constituted commission connected with the State prisons, consisting of the warden, captain of the guard and a physician, they are sent to the asylum. When the authorities at the asylum deem them to be sufficiently sane, they return them to the prison to serve out their term. This subject has been frequently agitated, and has always been one of great importance. Criminal insane are sent to the State prisons for murder. I have several of them in my mind who were no more insane than any person in this room. During the time that I was at Folsom several were sent to Napa and Stockton. We had to send them, because we had no place to put them, unless they were kept in solitary confinement. The subject of expert testi-

mony is of the greatest importance. The medical witness was frequently not examined or given an opportunity to explain. He was asked hypothetical questions, and required to answer yes or no. It could therefore be seen how valueless and misleading this class of evidence frequently was.

DR. J. W. ROBERTSON, of Napa, urged the importance of this question. The criminal insane received at Napa were not segregated, as the institution was overcrowded. There was no difficulty for a criminal to escape, if he had sense enough to do so. He deprecated the practice which existed of sending criminals to the asylums without the regular commitment, as they were thus in perfect ignorance of the cause of insanity or of its form.

DR. WALTER LINDLEY, of Los Angeles, moved the following resolution, which was adopted:

Resolved, That this Society especially endorses that portion of Dr. Ayer's paper referring to expert testimony, and that it be referred to the Committee on Medical Legislation, with a request that they take active steps to have it incorporated in the laws of the State.

AFTERNOON SESSION.

The Committee on Organization of County and District Societies reported that during the year two societies had been organized: the Sonoma County Medical Society, March 5, 1887, and the Napa County Medical Society, on December 5, 1887.

The effort to establish a quarantine station at San Francisco was unanimously endorsed, and the representatives of the State in Congress telegraphed to that effect.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President—James Simpson.

First Vice-President—Walter Lindley.

Second Vice-President—W. J. G. Dawson.

Third Vice-President—W. A. Briggs.

Fourth Vice-President—J. E. S. Baker.

Secretary—W. Watt Kerr.

First Assistant Secretary—L. M. F. Wanzer.

Second Assistant Secretary—H. M. Sherman.

Treasurer—G. C. Simmons.

Board of Censors—G. J. FitzGibbon, C. C. Valle,

S. F. Long, H. W. Dodge, E. W. King.

Board of Examiners—R. H. Plummer, C. H. Steele, C. E. Blake, C. E. Farnum, Jules Simon, W. S. Whitwell.

EVENING SESSION.

The report of the Committee on Diseases of Children was read by DR. H. M. SHERMAN, of San Francisco. He said that

ENTERO-COLITIS OF CHILDREN

became prevalent when the minimum daily temperature is above 60° F. Bacteria thrive in this condition, and produce various poisons—the ptomaines, of which tyrotoxin has been chiefly studied. The propagation of these bacteria is hindered by the antiseptic properties of the gastric juice and bile, but if

indigestion takes place, bacteria find a favorable culture medium, develop rapidly, and produce their specific effects. In accordance with these views, the modern treatment has been modified. Laxatives, followed by antiseptics, such as bismuth, salicylate, naphthaline, resorcin, nitrate of silver and bichloride of mercury, are the remedies most in favor.

DR. HENRY GIBBONS, JR., of San Francisco: Summer diarrhoea is a disease which is almost unknown in this city. We have diarrhoea, but nothing to compare with the summer diarrhoea of the East. He inquired if, in the treatment of these cases with naphthaline and sodium salicylate, no other treatment is used in connection therewith? Is it to be understood that no opium is used, but that the treatment is conducted solely with one or other of these drugs?

DR. SHERMAN: In the case reported by Dr. Holt, no opium was used.

DR. GIBBONS: Without any knowledge of the probable bacterial origin of the disease, the older physicians were accustomed to use calomel. The initial treatment was, as has been mentioned in this paper, the exhibition of a dose of castor-oil, in order to remove the decomposing materials on which the disease depended. This is the treatment specially advised by West. In such cases, both calomel and hydrargyrum cum creta were also used extensively for a like purpose, not only for the initial purpose of removing the defective secretions, but for the purpose of a continued treatment. It seems, at the present day, that the older physicians had a little more practical knowledge of the value of some drugs than those of a later period supposed they had, for you will remember at one time calomel and similar preparations were almost tabooed. Now it is discovered that they are germicides, and probably accomplish a great deal of good on that account, if we believe in the efficacy of the bacteria in the production of summer diarrhoea. The older physicians were also accustomed to use creasote, which is of some value. It has been long my practice in the treatment of diseases of this character to commence with a dose of hydrargyrum cum creta, or calomel, often guarded, as the expression used to be used, with a certain amount of opium; and one dose will sometimes be sufficient to practically cure a severe attack of diarrhoea. I must confess that I have not arrived at a conclusion which would make me willing to discard opium in the treatment of these diseases. Long ago I learned the efficacy of bismuth and opium in the treatment of children and adults, and have found it an excellent combination.

DR. J. A. ANDERSON, of San Francisco, would not attempt for a moment to criticize the paper that had been presented, were it not that it seemed to inculcate the idea of treating these diseases by the antiseptic method alone. That the diarrhoea is occasioned by bacteria all will admit, but there are cases when the ptomaines and bacteria in the system have brought about a train of symptoms which the mere administration of germicides will not remove. A child whose temperature has run up to 104° or 105° F. with cholera infantum may be filled up with germi-

cides, but unless you lower that temperature, your removing the germs will not relieve the child. Place the patient in a cold bath, and lower the temperature as the doctor suggests, and also give opium which decreases the secretions, and thus takes away the food of the bacilli, and you will have greatly aided your antiseptic treatment. The speaker said he practiced south of Market Street, and saw true cases of cholera infantum. He recommended the use of the cold water bath, and especially opium.

DR. GEO. CHISHORE, of San Francisco, did not see that the general practitioner had at present a sufficient justification for abandoning older methods, and basing his practice exclusively upon the theory of bacteriology. Until the battle between the micrococci and the ptomaines shall have been settled, until something more definite is ascertained, by which we can go to the bedside with more assurance and confidence, we will have to abide by the older methods. Another point which struck him as worthy of note was that the preceding dose of castor oil is in many cases sufficient to cure a case of itself. There seemed to be a direct conflict in the practice followed. A dose was given to clear out the bacteria, and then a dose of opium to lock up the bowels, and retain them there. In his practice, in many cases, during the hot season and the fruit season, of children with a temperature of 103° to 105° F., the administration of 4 grains of calomel and a little sugar would often find the child on the next morning minus its temperature, plus an appetite, and virtually well.

DR. G. F. G. MORGAN, of San Francisco, said that if the diseases mentioned by Dr. Sherman were due to bacteria, we might hope to destroy their activity by the free use of alkalies. He had understood Dr. Rosenstirn, last evening, as stating that modern investigation had shown that bacteria did not thrive in alkaline media; if so, the employment of alkalies was logical.

DR. SHERMAN, in replying, said: Only those remedies which had been advised in the last year or so were considered in his report. The older methods were left untouched. West, in his administration of castor oil for the diarrhoea of children, gave it in connection with opium in very small doses, but frequently. Its effect never was to clean out the bowels. The speaker used it very often. It always soothed the intestines, and gradually checked the diarrhoea. Calomel is known to be a germicide. Bismuth is also acknowledged to be a germicide, and is used in surgery for wound dressing; the wounds being douched during the operation with water in which bismuth is suspended. Oxide of zinc is used in the summer diarrhoea of children, especially for its control over vomiting. It has also been used as a wound dressing. One class of remedies much used, are the astringents, gallic and tannic acid, tincture of catechu and tincture of kino. How they can be antiseptics is at first a little puzzling. But if we remember that they have the property of forming insoluble salts with some alkalies, it is quite possible that they may form such salts with the alkaloidal bodies, the ptomaines, and thus render them inert. In regard to whether the treatment should be limited

solely to antiseptics, it was stated by Holt that these were the only remedies used. The true indications of the case should be met either by sedatives or stimulants. There is no doubt about the efficiency of a sedative dose of morphia, or a stimulative dose of alcohol, or digitalis, or nux vomica, but the main treatment was by antiseptics, and these others were subsidiary and auxiliary.

DR. GEO. C. PARDEE, of San Francisco, read the report of the *Committee on Ophthalmology, Otology, Laryngology and Rhinology*, giving an extensive *résumé* of the recent progress in these branches. Among the subjects touched upon were the treatment of corneal ulcers by the galvano-caustic and by corrosive sublimate; conjunctival blenorrhoea and its prophylactic treatment; the occasions requiring excision of injured and blind eyes; the cure of chorea, epilepsy, and other nervous troubles by correction of errors of refraction and accommodation; the treatment of glaucoma without operation, by eserine and pilocarpine; the treatment of choroiditis pigmentosa by electricity. He mentioned the return to David's operation; the irrigation of the anterior chamber and the use of antiseptics in cataract operations, and the abandonment of bandages and rest in bed after extraction.

DR. A. P. WHITTELL, of San Francisco, wished to direct special attention to one subject mentioned in the report—blennorrhoea at birth. It is something that must interest the profession in general, when we consider how much blindness is due to this one single cause. It is in the power of almost every one attending a woman in confinement to prevent this sad result. When it does supervene, by proper treatment total blindness will never occur, although the vision may be impaired. Vision with one eye is better than none at all. To run the risk of losing a good eye by temporizing with an eye which has been hopelessly injured, and already lost to sight, was, he thought, exceedingly bad practice.

DR. J. D. ARNOLD, of San Francisco, wished to draw attention to one or two little points in rhinology. Dr. Pardee adverted to the fact that a number of obscure reflex symptoms have been properly of late ascribed to some irritation in the nose, but he did not refer to the fact that a number of cases of asthma had been reported as thoroughly cured by cauterization of the hypertrophic tissues on the turbinated bones. Volzini discovered that nasal polyposus was frequently the direct cause of attacks of asthma, and merely by accident he found in his first case that by removing the polypi an end was put to the attacks of asthma. Since then it has been discovered that not only the removal of the polypi, but the destruction of all the hypertrophic tissues in the nose will produce the same result, and that it will, in a great majority of cases, effect a cure. He would have liked to have heard Dr. Pardee refer more fully to the beneficial effect, which the introduction of the use of the galvano-cautery has had in the treatment of catarrhal diseases, which drive so many patients into the hands of the charlatan, and which are in the majority of cases absolutely curable by this procedure, excepting, of course, cases of ozena.

DR. J. H. STALLARD, of San Francisco, believed that when we consider the amount of blindness caused by the neglect of ophthalmia neonatorum, it would be judicious to issue simple instructions to nurses and those having charge of infants. In his experience, milder astringents than the nitrate of silver had been sufficient, and he thought that some simple remedy might safely be placed in the hands of the laity. The use of these remedies should be just as much a part of the first dressing as the bath or the clothing.

DR. H. D. ROBERTSON, of Yreka, said that in the country the general practitioner was sometimes compelled to operate upon the eye, when the occasion was urgent and the patient too poor to obtain the services of an oculist. He had recently met with a peculiar case. The patient was a Kanaka, with double cataract. He made the preliminary incision on the right eye, and gently grasped the iris, when, to his surprise, that structure came away in its entirety. When operating upon the left eye he was still more cautious, and grasped the iris with the greatest care, making no perceptible traction, but it also came away. He had watched the subsequent progress of the case, and with this exception it had been most satisfactory. On careful inquiry, he ascertained that there was no history of leprosy, but that the subject had had tertiary manifestations of syphilis.

DR. WM. ELLERY BRIGGS, of Sacramento, had noticed the extremes to which some oculists have gone in doing away with bandages, and giving the patient liberty in moving about. In regard to enucleating eyes, having had sad experience in several cases, he now advised enucleation when the eye was totally blind, and where a foreign body was probably present. He recalled two patients who had lost their eyes, one of whom would not submit to enucleation, though advised to do so. The other, having gone into the country for two days when ordered to remain under observation, returned with sympathetic ophthalmia and after brief treatment went to other oculists, but is now an inmate of the asylum for the blind. He often enucleated eyes which appeared well, but he did not think that he had ever enucleated an eye which would be of any use as an organ of vision. When the physician is gone the surgeon is justified in removing the eye, if there is a possibility of sympathetic ophthalmia.

DR. PARDEE, in reply, said that he would certainly enucleate an eye when there was any danger of its affecting the other eye. He was also in favor of enucleating when vision had been lost.

(To be concluded.)

CHICAGO MEDICAL SOCIETY.

Stated Meeting, January 3, 1888.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

DR. HENRY GRADLE read a paper on
MOREID NASAL IRRITABILITY.

Morbid nasal irritability, or irritable nose, is a con-

dition of morbid sensibility of the nasal surfaces associated with hypertrophy of the submucous cavernous tissue. The condition has been inadequately described, and is confounded in textbooks mostly with chronic catarrh. The best account of it is in Mackenzie's article on neurosis of the nose, in the "Reference Handbook of Medical Sciences." Most writers who have described it in the periodical literature consider it principally in view of the distant reflexes to which it gives rise. The local reflexes form the basis of the present paper.

There is first, the vascular reflex. The vascular or cavernous tissue normally developed to a slight extent at the front and rear end of the inferior turbinated bone, is enlarged and augmented, and may appear also on the side of the septum, on the floor of the nose and on the front end of the middle turbinated bone. Through any irritation by dust or chilling of the surface this vascular plexus becomes engorged and if well developed in proportion to the size of the nasal cavity it obstructs the passage. It is the temporary or fleeting character of the obstruction which characterizes the irritable nose, not any permanent narrowing of the passage. Almost invariably engorgement occurs on one side at a time and then may jump over to the other.

Dependent upon this vascular dilatation is the second reflex, namely, sneezing. This may attain such a degree as to annoy the patient steadily. With the sneezing there occurs a third reflex, namely, copious secretion of clear mucus, indicating the absence of any inflammatory condition. This irritable nose may lead to reflexes in distant regions as to the eyes, ears, throat or nervous system at large. The irritable nose may be a symptom of some other nasal disease such as catarrh or the presence of polyp; it can also be caused by large irritated tonsils. But in many cases it exists by itself without any other primary disease to which it could be traced. It is very much influenced by the climate and patients can get relief by going to the mountains of the West or to the Pacific coast.

In the treatment any traceable causes such as tangible diseases of the tonsils should first be removed. Quinine relieves the attacks but probably does not cure them. No other drugs have seemed to the writer to be of any service. Where the condition is not symptomatic of another disease of the nose the only cure is the destruction of the cavernous tissue by the galvano-cautery, or in milder cases, by chromic acid. The latter agent is not as reliable as the former. A cure is possible whenever the extent of hypertrophied cavernous tissue is circumscribed, while where it is very diffuse, relief, but not an absolute cure can be promised.

DR. N. S. DAVIS, JR., reported a case of

RUPTURE OF AN AORTIC VALVE.

From the appearance of the specimen I exhibit a diagnosis cannot be made with certainty, but from the history of the case, together with the appearance of the valves, it seems probable that sudden rupture in one of them has taken place.

The history is as follows: On the 17th of Novem-

ber the patient entered Mercy Hospital. He complained of illness for about four months; prior to that time he had been in good health. Some years ago his hearing began to fail and he lost his employment as switchman on a railroad on that account. After that he continued to work as a day laborer. Four months previous to entering the hospital he was carrying a heavy load of coal upstairs when suddenly he felt something give way in his left side; he experienced considerable dyspnoea at once, and symptoms of cardiac insufficiency date from that time. At first the dyspnoea was noticeable chiefly on walking or on making rapid movements, but it was sufficient to necessitate his giving up all work. The dyspnoea increased steadily and he became very markedly anæmic, and in addition exhibited signs of general œdema. At the time he entered the hospital there was evidently fluid in the abdominal cavity as well as extensive anasarca of the extremities. He was feeble and so short of breath that he was unable to lie with any degree of comfort, but had constantly to sit, and slept in this position. The pulse was exceedingly feeble, the heart movements very rapid.

My father saw the patient the day after he entered the hospital and examined him before the clinical class. At that time his condition was as follows: In addition to the dyspnoea, œdema and anæmia, a collection of fluid was found in one of the pleural cavities. The lungs were evidently œdematous. There was probably chronic venous congestion of their lower and posterior portion. The movement of the heart was considerably more rapid than normal, its action was feeble, the cardiac sounds were distant and it was suggested that probably there was some fluid in the pericardial sac. In addition there was present over both the mitral and aortic areas a regurgitant murmur. The area of cardiac dullness was greatly increased in all directions. It was supposed that the heart was greatly dilated and that regurgitation occurred in connection with a lesion of the valves. There was no prior history of rheumatic trouble in the case. It was noticed that the liver was considerably enlarged. A little later in the same day the house physician noticed that the patient was sleeping almost constantly, and that the heart's action was very much more feeble and that the respiratory motions were only eleven to the minute. On arousing the patient the respiratory movements improved somewhat. On the following morning the patient was more drowsy, stupid and sleepy. In the afternoon of that day he exclaimed suddenly that he felt faint, and with a gasp or two was dead.

The post-mortem was made by Dr. Frank Andrews. He found a small amount of liquid in one pleural cavity. The lungs were œdematous and quite firm in the lower and posterior parts from chronic venous hyperæmia. The liver was enlarged, unusually hard and full of blood; the spleen normal; the left kidney normal; the right kidney had a slightly adherent capsule. The heart was greatly enlarged. In the pericardial sac there was an ounce and a half of fluid. The heart on section was found to be very much dilated—both the left and right ventricles were dilated. The walls, as you see, are not thickened. On the

right side the valves appear normal; on the left side the mitral valves are normal but the aortic valves are seen to be thickened, especially one of them, whose edge is considerably thickened and somewhat rounded. Nowhere is ulceration or destruction of tissue from that cause to be seen. The valves are not roughened by verrucosities or otherwise. The part of the valve where there is loss of continuity is also slightly thickened. The break in continuity, here seen, occurs in the edge of the valve just where it should be attached to the aorta. If rupture took place necessarily it took place four months before the death of the patient, and naturally thickening of the torn edges might occur. There is also present in the aorta above the valves small areas of thickening and hardening, evidence of long prior inflammation of its lining. Taking into consideration both the morbid appearances and the history of the case, it is most probable that four months before death, at the time from which the patient uniformly dated his trouble, a rupture of the aortic valve occurred. The valve had prior to this been enfeebled by the changes that had occurred in it incident to an extension to the valves of older endarteritis.

DR. NORVAL PIERCE reported a case of

OPERATION FOR HÆMOTHORAX.

(See page 582.)

DR. A. E. HOADLEY: There are some points about the case of hæmothorax that occurred to me while the history was being read, that I should like to refer to. I should conclude from the history, that some large vessel was wounded—that would be the inference as the exsanguination of the patient was rapid and extreme, and I should also conclude that if that vessel was in the lung that there must have been expectoration of blood. I do not see how it could have been avoided if the blade of the knife penetrated the lung sufficiently to wound a large vessel—therefore I exclude wounding of the lung. In the situation of that wound, immediately beneath the chest-wall, is the internal mammary artery, a good sized vessel. The intercostal was suggested, but these are given off from the internal mammary, and in that situation are small, and could not exsanguinate a patient so rapidly and so completely as this patient was in so short a time, so I conclude that the internal mammary artery was the one divided. Then again, it seems to me, that it would have been good practice to have endeavored to secure that vessel; there was a straight cut through the intercostal muscles, and I think some kind of forceps could have been introduced with a view of compressing the divided ends of the internal mammary artery. After the thoracic cavity was full of blood no harm could have come from the introduction of the instrument designed to compress the divided ends of the artery by the admission of air; provided it had been done antiseptically. I think the hæmorrhage could have been controlled by introducing a button into the wound, such a one as would go through the wound with a string attached to it, pushing it into the thoracic cavity, and then by making traction on the string outside, it would have

closed the bleeding vessels. This accomplished the subsequent treatment would have been more satisfactory. As far as the tolerance of the pleural cavity of blood is concerned, there is no difference between the two cavities, abdominal and thoracic. The one can tolerate the presence of blood as well as the other; the one can absorb as large a quantity of blood as the other; they are both serous membranes, identical in character and powers of absorption.

The case given is very interesting and certainly very remarkable. I was very much interested in the history. The patient evidently has good vitality to stand such a strain.

DR. PIERCE: I have nothing special to say in closing the discussion. Of course I might now do a great many things that I did not do at that time. But the man was in such an extremely low condition that anything more would have been out of place. Dr. Fenger was not sure that it was the internal mammary artery. The wound was a slight distance out of its course, about half an inch. Indeed, the character of the hemorrhage, at least after the first week, is against this as the source. The position of the scar has changed with the sinking in of the chest.

As regards the clot being removed, blood does not necessarily clot in the pleural cavity at all, but may remain fluid indefinitely.

DR. W. T. BELFIELD exhibited a specimen of

MUSCLE INFILTRATED WITH TRICHINÆ.

It was a piece of gastrocnemius muscle from the amputated leg of a man now in the Cook County Hospital. Some eighteen years ago this man, then a resident of New York, in company with a number of other individuals ate of some poorly cooked ham and sausage; nearly all of those who partook of this article of diet became very ill within a week, and a large percentage died. This man was very ill for two months, and did not entirely recover his health for some four months. In consequence of the circumstances surrounding the case the difficulty was recognized as trichiniasis, and an examination of the muscles of those who died confirmed the diagnosis. This man recovered, and during the succeeding 18 years has enjoyed good health, except that he has at various times, and more particularly during the last six or eight years, suffered from rheumatism in different parts of the body.

This muscle, like all the other muscles of the amputated leg, is thickly studded with trichinæ. By taking a fresh cut surface near the light you can see the little white specks very closely set. These are shown in the microscope to be trichinæ. Pieces of muscle taken from all parts of the amputated leg are found as thickly set with the parasites as is this piece, and inasmuch as these parasites are more numerous in the trunk than in the limbs, we may infer that the number of trichinæ this man contains in his body runs up into the millions. Of course it is not unusual to find muscles studded with trichinæ in individuals who have been in the habit of partaking of raw sausage or half cooked pork; but it is rare to find them so thickly placed where the history makes

it certain they were taken at one time. Very few individuals recover who swallow so many at one time as to produce so numerous a progeny. Those who are in the habit of taking uncooked pork can at different times take a few trichinæ without at any one time suffering from the invasion of so large a number as to produce the acute symptoms of trichiniasis.

The amputation was for disease in the knee joint, and had nothing to do with the condition of the muscles.

CHICAGO MEDICO-LEGAL SOCIETY.

Meeting of March 3, 1888.

E. J. DOERING, M.D., PRESIDENT.

(Continued from page 574.)

Conclusion of the discussion on DR. ETHERIDGE'S paper on.

THE MEDICO-LEGAL ASPECT OF UTTERANCES MADE IN MEDICAL SOCIETIES.

DR. CLARK GAPIN: I must say I am pleased to hear this subject presented so ably on both sides. I think if the utterances on one side could be taken to the courts, the utterances on the other would certainly very neatly and effectually neutralize them; so I think, as far as this society is concerned, it has acquitted itself well in that respect. The subject is certainly an important one. Only a short time since I was consulted and retained to defend a case of malpractice in which this was the charge. I do not know that any case has been actually tried, but in this case the charge was made, the suit brought, and physicians assured the gentleman that he had a good case, that the literature of the subject, and the profession were with him. The case went so far as to be brought up in the courts, but was abandoned, the medical gentlemen who proposed to support him having failed to make their appearance and sustain him during the trial. That case impressed me with the fact that if we are not immediately upon this subject, in the law, we are very close to it. I had occasion to go over the subject preparatory to that trial, and I have made up my mind to this, that the great discovery of antiseptics, or what we might call therapeutic cleanliness, has come and has come to stay. I do not imagine, however, that it will remain in any very violent form; I think it will finally settle down to about what has taken place in other departments of the law; that what will be required of the practitioner in this respect will be the same that is required of him in surgery or the administration of medicines, ordinary care and diligence, and ordinary skill in view of the knowledge of the profession at or within a reasonable time of the date of the occurrence of the supposed injury.

Dr. Etheridge, it seems to me, somewhat overrates the importance of these utterances in societies. No court in which I have practiced will admit, as evidence, the transactions of a society, or surgical or medical books. I know there are some courts in which it is done, I think the courts of Iowa have admitted medical or surgical treatises, as evidence, but I think it is not done in the courts of the State of

Illinois, and I know the same is true of the courts of Wisconsin. For that reason I think it is doubtful if any of these utterances will find their way into the courts, but I think there are members of the profession who are so positive in their belief of the necessity of this antiseptic, or therapeutic cleanliness, you may call it what you will, that if brought to the witness stand they will express their convictions in such a way as to convince a jury that somebody has not exercised ordinary care and diligence. In medicine and surgery there is no ideal perfection and little that is absolutely sure, but I will say that my own experience as a physician has been very favorable to antiseptic treatment of the puerperal state, and if called upon the witness stand I should be compelled to say that one who had been careless with regard to the cleanliness of the patient had not done his whole duty by his patient. I think that what we should begin to do at once is to impress upon the profession at large—especially upon the careless members of the profession, that sooner or later they will have devolve upon them this responsibility, and that it may assume a financial aspect. I think that while Dr. Etheridge's view is quite correct there is a word beyond, and although the profession possibly is not to-day in a position to condemn a man for want of this care, it is coming to that. We may pass antiseptic by as one of those fitful fevers of discovery which we have passed through before, but I take it that the antiseptic theory is one of the greatest discoveries of all ages, and that it will take its place beside those great discoveries which have come and remained. The danger in the particular respect under discussion is not so much from the literature on the subject as from the belief of the profession that the man who neglects this therapeutic cleanliness does not do his whole duty by his patient.

DR. L. L. McARTHUR: Although one of the younger men, I have the temerity to rise to this question; and trust that it will not be imputed to simply the enthusiasm of youth leading me to jump at the new, and abandon the old, that I accept what to my mind appears definitely proven. Dr. Etheridge in referring to old theories that have been abandoned, and new ones which have taken their place, spoke in rather a scoffing way; in the way of decrying them; that any progress which we seem to have made is not progress, but only the adoption of the new for the old! He makes reference to the fact that fermentations were formerly supposed to be due to oxygen, then the last theory that the yeast plant was the cause of that fermentation. He cannot but admit that alcohol is the result of the life history of the yeast plant; that whenever the yeast plant is placed in dilute sugary solution, we always get alcohol; it is a positive demonstration not theory. From the yeast plant we get alcohol; we no not expect to get "scarlet fever!" If the vinegar plant is put into sugary solutions we do not expect to get alcohol.

The microorganism of puerperal fever may not have been discovered, but that some microorganism is present, even Dr. Parkes admitted, in saying that the case had died from some decomposition of the

clots in the womb of the case in question; although all infectious material had been kept from without! He practically admits this decomposition was from the influence of microorganisms, and that without them we can have no decomposition. This has been demonstrated hundreds and thousands of times through the influence of the cotton plug in the gelatin culture tube. If we seal up tin cans with fruit in them so that the microorganisms are killed, the fruit remains without decomposition. And so with the microorganisms which may be in the vagina; and we all admit that there are plenty of them there, they may induce suppuration, and it is probable that suppuration goes on after every labor, as these white milky discharges contain microorganisms. If we admit a specific action for the larger microorganisms it is reasonable to admit the same for the smaller ones. To prove these points and advance science the proper way is not by deriding them, but to take up the subject oneself and work at it. All the advance that has been made in the whole theory of bacteriology has been made by the German, French and English Nations, Bastian and Pasteur making their advances in fighting each others theories. Having theories to begin with they endeavored to demonstrate them, and finally came around to fall into the same line, as the result of their *practical* experiments. Without a sound foundation medically we can obtain none legally. And that is the way advance can be made in medicine, by investigating the theories advanced, and proving them false rather than to cry them down, saying let us not be in too great a hurry. Certainly conservatism is valuable, and the conservatism which Dr. Etheridge advocates is of the character of the governor to a steam engine, it regulates and steadies it, but does not stop its progress.

DR. ETHERIDGE, in closing the discussion, said: I have but little to say in conclusion, and that is this: that puerperal fever is more discussed to-night than anything else. That was not the topic. I have nothing to say about puerperal fever, only incidentally as an illustration, and when the discussion brings out the remark that the conservatism of my paper is too conservative, I simply wish to say that everything of that kind is used as illustration.

Dr. Gapin came to the point when he gave an illustration of how this thing is working in the public mind. The Semmelweiss theory is good as far as it goes, but if we are to make a man's case in court stand or fall on the Semmelweiss theory it seems to me that we should be more accurate in our utterances. If that theory is without an attackable side then the logical conclusions therefrom would be all right. I am glad the subject has brought out some discussion, and I hope it may have its results in its bearing in the future upon the expressions made in these medical societies, where too much is uttered, perhaps, in the hastiness and ill consideration of youth, which would not be uttered after ten or fifteen years of practice.

PROFESSOR W. LEUBE has been appointed to the Chair of Clinical Medicine in Leipzig.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Tubal Pregnancy.

At the April meeting of the New York County Medical Association Dr. Joseph E. Janvrin, for many years the associate of the late Dr. Edmund R. Peaslee, read a paper on the *Treatment of Tubal Pregnancy*, in which he advocated the primary removal by abdominal section of the tube and its contained fetus before rupture of any portion of the tube has occurred. This procedure, he explained, was to be undertaken with the expectation of delivering the tube and its contained fetus intact, and resorted to before the end of the fourth month of gestation. In a paper read by him before the American Gynecological Society in 1886 he said he had recommended early laparotomy, as a rule, in cases of tubal pregnancy in which hæmorrhage had occurred (instead of employing electricity, as was now commonly done), for the purpose of removing all possible danger of further hæmorrhage. In December of that year he reported, at a meeting of the New York Obstetrical Society, a case in which he had diagnosed tubal pregnancy at the fifth week, and in which death had occurred at the end of the seventh week, from a second hæmorrhage resulting from a ruptured artery on the peritoneal surface of the sac; the first hæmorrhage, which was extremely small, having taken place from the same artery nine days previously, and galvanism having in the meantime been employed for the purpose of destroying the fetus.

At that time he had become convinced, from this case and from three other similar cases, that the time to operate was when preliminary or partial rupture occurred, as evidenced by the first hæmorrhage; the primary collapse symptoms constituting an almost certain indication both of the pathological condition and of the need of immediate interference. In speaking of the symptoms of tubal pregnancy he had stated that he believed that it was easier to recognize this condition than hydrosalpinx, and that the presence of an irregular decidual discharge in a woman who had missed a period, associated with the normal signs of pregnancy and an enlarging, fluctuating, and exquisitely sensitive mass on one side of the uterus, and followed subsequently by symptoms of shock, could hardly be referred to any other condition, even as early as the fifth week. In a case of this kind he had also said that he would certainly perform laparotomy whenever the first symptoms of internal hæmorrhage occurred. Again, in a discussion at the January meeting of the Obstetrical Section of the New York Academy of Medicine in 1887, he had stated that in any case in which, from the rational and physical signs, he had become convinced that tubal pregnancy was present, even before symptoms of a rupture of the peritoneal covering of the tube presented themselves, he would most earnestly urge laparotomy, and perform it if he could obtain the consent of the patient. Up to the present time he had been able to

find but one case on record in which the operation was performed prior to a laceration, or partial laceration, of the tube, and before the fourth month of gestation. This was one by Dr. Joseph Price, of Philadelphia, in September, 1887, reported in the *Annals of Gynecology* (Boston) for March, 1888; and in a recent letter to Dr. Janvrin concerning the case Dr. Price had said: "The history was simply that of delayed bleeding two weeks and constant pain and nausea. I operate for extra-uterine pregnancy or pus tube."

Having referred to the cases of laparotomy in tubal pregnancy, after one or more decided hæmorrhages, performed by various operators in this country and in Europe, he observed that all such operations, resorted to after there had been a rupture of some part of the tube, should be classed as *secondary operations*. The advisability of enlarging this field, by removing the tube with its contained fetus before any rupture has occurred, and during the early weeks of gestation, Dr. Janvrin said he had advocated on every possible occasion during the past year and a half. Until very recently he believed that he stood almost, if not quite, alone as regards this point; but during the last few weeks he had found that other gynecologists also had come to the same conclusion. Thus, in the *American Journal of Obstetrics* for April, 1888, Mr. Lawson Tait said that, although he had never as yet been called upon to operate until after the sac had ruptured, if in any case met with by him there was a reasonable supposition of the existence of a tubal pregnancy which had not yet ruptured, he should recommend immediate laparotomy. Drs. Joseph Price and Howard A. Kelly, of Philadelphia, he believed were also in accord with this proposition. In a recent letter to Dr. Janvrin, Dr. Kelly had said: "The history of fetuses which have been destroyed by faradization has frequently been associated with protracted suffering to the mother, and with conditions of chronic invalidism."

In speaking further of the bad effects sometimes resulting from the use of electricity he quoted Dr. Robert P. Harris, of Philadelphia, who, in the *American Journal of Obstetrics* for August, 1886, had referred to several cases in which attacks of peritonitis had occurred several years subsequent to the death of the fetus, and due to its presence in the abdominal cavity. Mr. Tait had also very recently (*Amer. Jour. of Obstetrics* for April, 1888) pointed out the danger of the placenta going on to develop enormously after the death of the fetus. Up to the present time, however, the weight of opinion among American gynecologists was decidedly in favor of destroying the fetus by electricity in some form in cases in which the diagnosis has been made prior to the fifth month and in which there has been no decided hæmorrhage from the sac wall. Among the advocates of this measure stood Thomas. Lusk, Garriques, Mundé and others, of New York, and M. D. Mann, of Buffalo; and each of these, as well as other operators throughout the country, had had excellent results with it. In the *Annals of Gynecology* for February, 1888, Dr. Mann had stated that Dr. Janvrin was able to find only three cases in literature.

including his own, where rupture of a vessel caused death without rupture of the sac. Since the publication of his paper before the American Gynecological Society, however, he had seen one other case in which this condition was fully demonstrated at the autopsy. Two other important specimens he had recently seen in cases in which abdominal section was performed. In one of these the fetus had died from pressure of blood clots at about the end of the third month, and several other attacks of hæmorrhage had occurred between this date and the seventh month, when the tube, fetus, clots, etc., were removed. In the second case, where laparotomy was performed at the seventh or eighth week, there was a history of slight hæmorrhage from the sac wall and slight peritonitis for a week or ten days prior to its removal.

In the paper referred to Dr. Mann had expressed the opinion that if rupture has not occurred, electricity should take precedence of laparotomy. To this proposition Dr. Janvrin said that he would assent, provided no experienced laparotomist could be found to operate; but not otherwise. With a capable operator at command he would urge abdominal section just as soon as the diagnosis had been made, and before any hæmorrhage from the sac, with its subsequent attacks of peritonitis, could take place. These frequently recurring attacks of slight hæmorrhage were exceedingly dangerous to the life of the mother, and when they had occurred, and the time came when laparotomy *must* be performed, the patient was in bad condition for the operation; while the procedure itself was much more complicated than at an earlier period. The same thing could be said in reference to waiting to perform laparotomy until serious symptoms had supervened, after the fetus had been killed by electricity. Here, too, there would be more or less adhesions to deal with, and the work to be done would be much more difficult than the removal of a simply enlarged and still unruptured tube containing the fetus, with no products of inflammatory processes to interfere with its ready extraction.

In the discussion on the paper the principal advocate of electricity, in preference to the radical operation advised by Dr. Janvrin, was Dr. Wm. T. Lusk, who said in opening that he wished he could be convinced by the arguments advanced that the time had come for the doing away with galvanism in the treatment of tubal pregnancy. It would certainly be very gratifying, he went on to say, if one could always perform laparotomy as this condition was diagnosed, as the operator would thus secure an amount of *éclat* which was not possible when electricity was employed. Destruction of the fetus by the latter was a far less brilliant method of procedure, and when it was attended with successful results the operator was not infrequently subjected to insinuations that extra-uterine pregnancy had never existed at all. At the same time, he was so thoroughly convinced that these cases could be efficiently and safely treated by galvanism after the appearance of the characteristic colicky pains, that he did not as yet feel justified in abandoning so satisfactory a method. The operation was a very simple one, requiring no special skill; so

that it could be practiced by any one; and, as a rule, the results were all that could be desired. He then mentioned that he had had under observation two of his cases, occurring in private practice, for a long period of time; one of them for six years, and the other for four years. At the time the first of these patients was operated on she was believed to be in a dying condition, but, after consultation with Dr. Thomas, it was decided to employ electricity, and the result was entirely satisfactory. There had never been the slightest bad effect, and at the present time the mass remaining was about the size of a pigeon's egg. In the second case the tumor was now about the size of an English walnut. Since the operation the patient had given birth to a living child, and there had been no trouble whatever at the time of parturition.

Now, if we had such an efficient method, which was perfectly safe in the great majority of instances, there did not seem to him to be sufficient reason for giving it up. Even if inflammation, suppuration or ulceration should ensue, we could under such circumstances usually perform laparotomy with satisfactory results. He was, therefore, convinced that, in the present state of our knowledge, treatment by electricity was the best mode of proceeding. As to performing laparotomy before rupture of any portion of the tube had occurred, the difficulty of diagnosis constituted a serious objection, and even Mr. Tait had expressed to him his inability to make a diagnosis at this time. In regard to the other five cases which he had treated with electricity Dr. Lusk said that he could not speak with the same confidence as the two just mentioned. The results were entirely satisfactory at the time but, as the women were hospital patients, he had not been able to follow up their subsequent history. If he could feel sure that laparotomy was just as safe as electricity he should certainly be willing to join the ranks of those who advocated this procedure; but up to the present, as he had stated, he had not yet become convinced of this fact. As to the danger of the growth of the placenta after the death of the fetus, this seemed to him to be very slight; and, indeed, he questioned very much whether such a danger really existed at all.

Dr. Andrew F. Currier having stated that it seemed to him one of the inconsistencies of modern gynecology that operators should so frequently perform laparotomy for the relief of such conditions as hydro- and pyosalpinx, and yet hesitate to do so in the graver one of tubal pregnancy, Dr. Lusk replied that, in considering this matter, it was important to remember that while such conditions as hydro- and pyosalpinx could not be removed by electricity, this was entirely possible in tubal pregnancy. If, however, treatment by electricity were practicable in hydro- and pyosalpinx, gynecologists would hardly be likely to resort to laparotomy until electricity had first been given a fair trial. He then spoke of the importance, in arriving at a correct diagnosis in many cases, of first making a thorough examination of the patient, and referred to two cases in his own experience illustrating this point.

Dr. George T. Harrison said that his experience

with galvanism had been very favorable. In at least three cases he had certainly destroyed the life of the fetus by means of this agency; and on examining one of these patients two years after the operation, he had found the sack much sunken. Since then the woman had also given birth to a child in a normal manner. Still, it was undoubtedly true that the tendency of modern gynecology was to advance in the line indicated by Dr. Janvrin, and, while he was not as yet quite willing to declare himself in favor of the general adoption of laparotomy in the class of cases referred to, he was free to confess that the results already obtained from this procedure, especially by some of the German operators, had had considerable weight in influencing him in its favor. At the present time, however, it seemed to him that the experience of the profession was as yet too limited to enable us to arrive at any positive conclusions on the subject. There was one point in regard to the diagnosis of tubal pregnancy as given by Dr. Janvrin which he thought should perhaps be somewhat modified, and that was in regard to the extreme sensitiveness of the tumor, since he had himself observed instances in which this great tenderness did not exist.

Dr. A. Palmer Dudley said that the all-important matter in connection with this whole subject seemed to him to be the question of diagnosis, and that he should very much like to know how to make the diagnosis. If this was ever established, the treatment was sufficiently easy, whether electricity or laparotomy was resorted to. Under the circumstances referred to by Dr. Janvrin laparotomy was a comparatively simple operation, and no more dangerous than when it was done for hydro- or pyosalpinx. He then related a case of his own in which he had supposed tubal pregnancy to exist, but on opening the abdominal cavity he had found a parovarian cyst with displacement of the ovaries and pyosalpinx, while the fimbriated extremities of the tubes were attached in one case to the bladder, and in the other to the rectum. He said that he would not hesitate to resort to laparotomy early in any instance where he was able to make out the diagnosis of tubal pregnancy; but in the case in question there was a condition other than tubal pregnancy giving rise to the symptoms described by Dr. Janvrin as characteristic of the latter.

Dr. Dudley having stated, in reply to a question of Dr. Janvrin, that he had not observed in this case an irregular decidual discharge, Dr. Janvrin said that he regarded this as the most important point in the diagnosis of tubal pregnancy. If the symptoms which he had mentioned, with the exception of those of shock (which were due to rupture), were noted in any case, he thought there would be no difficulty in making out the diagnosis before rupture of any portion of the tube had occurred. As to Mr. Tait's views on the diagnosis of tubal pregnancy before rupture, in the very last number of the *American Journal of Obstetrics* (April, 1888), he stated that he had never been able to make out the diagnosis at this time because he had never been consulted in any case until after rupture had taken place. While it was true that electricity was not, as a rule, followed

by bad effects, certain cases had been reported in which there were evil results, and two such instances were referred to by Dr. Mann in the article in the *Annals of Gynecology* mentioned. The German cases spoken of by Dr. Harrison were all secondary operations, and, as far as he was aware, the only primary operation which had as yet been performed was that of Dr. Price, of Philadelphia, in September last.

P. E. P.

BOOK REVIEWS.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE. For the Use of Physicians and Students. By JAMES TYSON, M.D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania. Sixth Edition, revised and corrected. With a colored plate and wood engravings. 8vo, pp. viii+253. Philadelphia: P. Blakiston, Son & Co. 1888. Chicago: W. T. Keener.

It would be impossible to criticise this book adversely, and when a work of its kind has reached its sixth edition it is no longer in need of favorable comment. The most important additions to this edition are the phenyl-hydrazin hydrochlorate, alpha-naphthol, and thymol tests for sugar. A good deal has been added to the edition, while at the same time much has been omitted that was in the fifth, but only what is no longer required. Dr. Tyson is an acknowledged authority in urology, and his book is all that can be desired.

THEINE IN THE TREATMENT OF NEURALGIA. Being a physiological contribution to the therapeutics of pain. By THOMAS J. MAYS, M.D., Professor of Diseases of the Chest in the Philadelphia Polyclinic, etc. Sm. 8vo, p. vii+84. Philadelphia: P. Blakiston, Son & Co. 1888. Chicago: W. T. Keener.

This little book, a reprint of a contribution to the *Polyclinic*, from September, 1887, to February, 1888, contains five chapters and an appendix, devoted to an introduction, the physiological action of theine, the special therapeutic indications for the use of theine, neuralgia, and, in the appendix, remarks made by Dr. Charles K. Mills on a paper read by Dr. Mays before the Philadelphia Neurological Society in December, 1887, on "Theine in Pain." As a contribution to the therapeutics of pain, from a reliable source, the little volume is well worth study.

MISCELLANEOUS.

COUNTERFEIT MILK.—St. Louis *Republic*. A few days since a person representing himself to be the agent of an Iowa dairy farm called at the business office of R. Gerner & Co., ice-cream manufacturers, at No. 100 North Twelfth street, and desired to make a contract with Mr. Gerner to furnish him with the milk from which to make his ice cream. The price named was low, and from this and other indications Mr. Gerner became suspicious of the Iowa company's milk. He se-

sured a sample of the milk and took it to the St. Louis Dairy Company's laboratory to be analyzed by their chemist. The milk was carefully analyzed, and the dairy company's chemist saw at once that there was a dangerous and unusual counterfeit. It is a perfect imitation in every respect, and nothing but a chemical analysis would discover its true character. It is apparently rich and wholesome and pleasant to the taste. The amount and proportions of the solids that it contains are the standard test of the purity of milk. The following table give the component parts and the proportions in pure milk:

AVERAGE PURE MILK.

Water.....	\$6.23
Solids.....	13.77
Casein.....	3.23
Albumin.....	0.50
Butter.....	4.50
Milk sugar.....	4.93
Salts.....	0.6

The dairy company's chemist's analysis of the Iowa firm's milk gives the following result:

Water.....	\$1.3
Fat supposed to be cottonseed oil or some similar substance.....	2.6
Chemical substances corresponding to casein and milk sugar, whose nature is not yet determined.....	15.0
Mineral salt, supposed to be nitre or some other similar substance.....	1.1

Total.....	100.0
Percentage of solids.....	18.7

The difference between the Iowa company's product, and pure milk will be readily perceived by reference to the tables above. The chemist who made the above analysis states that he has every reason to believe the substances that in the Iowa "milk" take the place of butter fat, casein, milk sugar, and ash are all injurious. Exactly what these substances are the chemist is not yet prepared to say. He is now at work upon the analysis, however, and hopes to be able to determine the question in a few days.

The Iowa company that is engaged in the manufacture of this spurious milk has an agent in St. Louis who is busily engaged in canvassing the restaurants, milk-dealers, ice-cream manufacturers, and others in the city who use large quantities of milk, and investigations have developed the fact that large quantities of the spurious product have already been sold here.

A law passed a little more than a year ago fixes the standard of purity for milk in Missouri at 12 per cent. of solids, including 2.5 of butter fat; and of cream at 12 per cent. of butter fat. It will be seen that the Iowa product lacks a great deal of conforming to this standard, and for the sake of the public health it is to be hoped the proper authorities will enforce the law against the injurious counterfeit.

COMPOSITION OF MOXIE NERVE FOOD.—Francis Wyatt, says the *Medical World*, has analyzed Moxie with the following result: One hundred parts by weight when distilled were found to contain three-fourths per cent. alcohol and one-fourth per cent. of the essential oils of saffras, winter-green and anise. The residuum in the report was evaporated to dryness, and contained 7.880 per cent. of extractive matter, consisting of

Sugar.....	3.810
Glucose.....	1.250
Sodium carb.....	1.070
Saffras.....	1.870
Gentian.....	1.870
Checkerberry.....	1.870
Quassia amara.....	1.870

PROPOSED NEW YORK LAW WITH REGARD TO THE EMBALMING OF DEAD BODIES.—A bill has been introduced into the New York State Legislature which provides that "it shall not be lawful for any person or persons to introduce into or upon any dead body of any person or human being, any poisonous substance, organic or inorganic, for the preservation of the same, or any so-called embalming fluids or materials of any kind, which will, in any manner whatsoever, interfere with chemical tests which may subsequently be applied or made use of by chemists in medico-legal investigations."

INTERNATIONAL OPHTHALMOLOGICAL CONGRESS AT HEIDELBERG.—The Committee announce that at this meeting, on August 9-12, 1888, discussions will be held on: "Gaucoma," introduced by Priestley Smith, of Birmingham, and Snellen, of Utrecht; "Cataract," by Gayet, of Lyons, and Schweigger, of Berlin; "Bacteriology," by Leber, of Göttingen, and Sattler, of Prague.

MEDICAL ASSOCIATION OF GEORGIA.—At the recent annual meeting the following officers for the ensuing year were elected: President, J. S. Todd, Atlanta; First Vice-President, J. B. S. Holmes, Rome; Second Vice-President, E. R. Anthony, Griffin; Secretary, K. P. Moore, Macon; Censor, B. R. Doster, Blakely.

SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.—The following are the officers for the ensuing year: President, J. R. Laine; Secretary and Treasurer, G. L. Simmons, Jr.; Directors, the President and Secretary elect, W. R. Cluness, G. L. Simmons and H. L. Nichols.

PRACTICAL COURSES IN EMBRYOGENY.—Dr. Dareste, Director of the Laboratory of Teratology at Paris, began a course on normal and teratological embryology on April 10. The course, it seems, will be made permanent.

NEW JOURNALS.—The *Bollettino della Poliambulanza di Milano*, the *Omaha Clinic*, and the *Journal of the N. E. Virginia Medical Society*, are the latest new medical journals.

MEDICAL ASSOCIATION OF ALABAMA.—At the recent annual meeting Dr. C. M. Baldridge was elected President, and Dr. E. F. Cross junior Vice-President. Other officers hold over.

EXPERT FEES.—The Supreme Court of Texas has decided that a doctor is entitled to extra fee for testifying as an expert when summoned by the court to do so.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM APRIL 25, 1888, TO MAY 4, 1888.

By direction of the President, Surgeon Remus C. Persons, U. S. Navy, is assigned, temporarily, to the charge of the Army and Navy General Hospital, Hot Springs, Ark., during the absence, on leave, of Major Richard S. Vickery, Surgeon U. S. Army, Surgeon in charge. S. O. 96, A. G. O., April 26, 1888.

Capt. A. A. De Loffre, Asst. Surgeon, granted leave of absence for six months on surgeon's certificate of disability, with permission to go beyond sea. S. O. 99, A. G. O., April 30, 1888. First Lieut. Guy L. Edie, Asst. Surgeon, now under orders to report for duty to the commanding officer at Ft. Douglas, U. T., will accompany the Eighth Cavalry from Dept. of Texas to Dept. Dak., and upon completion of this duty will proceed to Ft. Douglas. S. O. 99, A. G. O., April 30, 1888.

First Lieut. W. D. McCaw, Asst. Surgeon, relieved from duty at Ft. Leavenworth, Kan., and ordered for duty at Ft. Crawford, Col. S. O. 45, Dept. Mo., May 1, 1888.

First Lieut. Ogden Kalferty, Asst. Surgeon (recently appointed), ordered for duty at Ft. Clark, Texas.

Capt. Jno. V. Lauderdale, Asst. Surgeon, ordered from Ft. Clark, Tex., to Ft. Davis, Tex. S. O. 98, A. G. O., April 28, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 5, 1888.

Medical Director W. T. Hord and Surgeon T. Woolverton, ordered as delegates to represent the Medical Department of the Navy at the meeting of the American Medical Association, May 8, at Cincinnati. Surgeon Geo. P. Bradley, ordered to Navy Yard, Brooklyn, N. Y., without delay.

CORRIGENDUM.

IN THE JOURNAL of May 5, page 547, second column, the third paragraph from the bottom should read: "The wound in the bowel was closed by a double line of silk sutures, the first being a continuous suture including only the mucous membrane; the second a continuous Lambert suture holding the peritoneal coats in apposition."

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ADDRESS IN SURGERY.

A SKETCH OF THE PROGRESS OF SURGERY.

Delivered in the Section on Surgery, at the Thirty-Ninth Annual Meeting of the American Medical Association, May 10, 1888.

BY E. M. MOORE, M.D.,
OF ROCHESTER, N. Y.

From the broad field of surgery there are many lines of inquiry which might interest its devotees, if properly followed. But to treat of any one of them implies special study of the new developments that now abound in the great advances in the art, and the sciences whose discoveries it employs. On a former occasion, your reader occupied the same relation to you that he does at this moment. He then prepared himself for the occasion by a series of experiments *in corpore villi*, to illustrate the subject of blood infusion. He believes that he had the good fortune to add a thought to knowledge on this topic. It seemed to him that a general view of the relation of surgery, and the surgeon, to the community in which he lives and has lived, might be of sufficient interest to justify the spending an hour in its review. This must revive well-known stories, and allude to present movements familiar to all; but they contain triumphs which always stir the heart of the true surgeon. Pope, in his mellifluous couplet, which has pleasantly rung in the ears of every physician from his youth up, has interpreted the views of Homer of three thousand years ago, when he sang that,

"A wise physician, skilled our wounds to heal,
Is more than armies to the public weal."

Then as now, the surgeon was most prominently connected in the public mind with the treatment of wounds of accident, or those of his own making. Notwithstanding Homer's complimentary opinion, the surgeon has always found an influence that overshadowed him, until very recent times. He depends on his individuality, not upon his surroundings. He has no motive to promote combinations of men. In his thinking he is the exponent of the natural and not the supernatural. Ever watching the development of law in nature, he is her humble devotee, and believer in her inexorable ways. But the progress of his knowledge was for long ages fearfully handicapped by the supernatural. Indeed, this still holds firm in many minds. But lately I was urged by a loving wife to ply my best skill in a case of Bright's disease, for she would never

yield to the belief that recovery would not be likely to ensue, when earnestly asked in prayer, if the right kind of medicine was used. We have accounts of Egyptian medicine 1,500 years before the time of Hippocrates. But the physician was always also a priest, and must ever administer his services with a prayer to Horus. A divided responsibility is ever enervating. Restraint was upon him everywhere. He could not examine the dead, for they were to be preserved. Even the potter's field received no body until a cheap method of embalming was employed. The body was to be reclaimed by its owner, in a period of time varying from 3,000 to 10,000 years, according to the moral and intellectual status of the individual. Of course the body should be preserved with the least possible injury. During the last twenty-five years there has been in this country an enormous increase in the development of specialties in medicine, as we all very well know; partly, perhaps, due to the large increase of knowledge, and partly to the rapid growth of cities. But this is only the revival of a custom which prevailed at least 4,000 years ago. The subdivisions of the profession were more minute in Egypt during the rule of the Pharaohs than with us to-day. I may at once disclaim any intention of giving you a history of surgery. The time is inadequate, and this you can draw from many sources. It has been well and carefully studied, but would be a topic too trite at this time. The present status of surgery has had its exposition too well brought out to leave an opportunity for any interest in its restatement. I must content myself with using only a few points that may touch its growth to illustrate its relations to science in general, with some criticisms on a few subjects that have come under my personal observation. But I cannot pass by a notice of the Father of Medicine in his rôle of medical philosopher. The practice of medicine draws its votaries to the recognition of the uniform bearing of physical law, and away from the easy solution of difficult problems by their reference to the supernatural. So firmly has the latter explanation been regarded as the sole one by mankind in past times, that only the clearest intellects and boldest natures would stand out to the defense of the universal supremacy of law. The physician attacks the problems of the Kosmos at their most difficult point, that of the laws governing the functions of living beings. It is his necessity, and is also his misfortune, to attempt the unravelling of the intricate crossing and contest of physiological functions whose even balance permits

the continuance of life. The marvelous developments of science in astronomy and chemistry are solutions of simple problems compared with those of biology. Chemistry finds its greatest labor as well as its greatest triumphs in the analyses of the elements of animal tissues. The aim of the medical philosopher is to approximate the law which he cannot clearly enunciate. But there are explanations of the Kosmos that may be and are properly regarded as sciences, that show the operation of laws disturbed by others, which only allow approximate statements. Meteorology furnishes a good illustration of such conditions. The general controlling movement of the storm centre can be predicted. But a myriad obstructing forces interfere with the exact mathematical statement which, but for their intervention, might be made. Medicine has abundant illustrations of law whose movement is seen and predicted but, unfortunately, obscured by intervening forces. An effort of this kind would never be undertaken by a physician who commended his work to the favor of Horus. The pressure of the gods was more light upon the Greeks than upon the Egyptians, who were their teachers. Still, the practice of the art was complicated with much appeal to Apollo and Æsculapius. I have quoted in a public address in another place the relation that Hippocrates bore to his contemporaries upon the universality of law. His statement cannot be excelled at the present day by the most advanced thinker; it is one that would do honor to Herbert Spencer. It must be recollected that the Father of Medicine lived at a time when Greece was at her highest pitch of greatness. He was the contemporary of Pericles and Socrates, the two most extraordinary men of antiquity. In the quotation that I make from Grote, you will observe at what an absurd conclusion Socrates arrived in attempting to part phenomena from the universal operation of law. The very magnificent topics which awed him are our best illustrations of the principle that governs all things. Grote, in speaking of the division between the natural and the supernatural, says:

"Thus Socrates openly admitted it, and assigned to each a distinct and independent province. He distributed phenomena into two classes: one wherein the connection of antecedent and consequent was invariable and ascertainable by human study, and therefore future results accessible to a well instructed foresight; the other, and those too, the most comprehensive and important, which the gods had reserved for themselves and their own unconditional agency, wherein there was no invariable or ascertainable sequence, and where the result could only be foreknown by some omen, prophecy, or other specially inspired communication from themselves. Each of these classes was essentially distinct, and required to be looked at and dealt with in a manner radically incompatible with the other. Socrates held it wrong to apply the scientific interpretation to the latter, or the theological interpretation to the former. Physics and astronomy, in his opinion, belong to the divine class of phenomena, in which human research was insane, fruitless and impious.

"On the other hand, Hippocrates, the contempo-

rary of Socrates, denied the discrepancy, and merged into one those two classes of phenomena—the divine and the scientifically determinable—which the latter had put asunder. Hippocrates treated all phenomena as at once both divine and scientifically determinable. In discussing certain peculiar bodily disorders found among the Scythians he observes: 'The Scythians themselves ascribe the cause of this to God, and reverence and bow down to such sufferers, each man fearing that he may suffer the like, and I myself think too that these affections, as well as all others, are divine; no one among them is either more divine or more human than another, but all are on the same footing and all divine; nevertheless, each of them has its own physical condition, and not one of them occurs without such physical condition.'

Recurring to the subject of wounds we can perhaps at no one point get a better illustration of the movement of discovery than in the changes with reference to their management, and especially of those that the surgeon inflicts in performing the amputation of a limb. It would be idle in the few minutes at my disposal to follow accurately even this one line. Hippocrates can hardly be said to have amputated at all, as we understand the operation. We find the modification and growth of the procedure to have begun less than 300 years since. At first slow of change, but latterly made in almost every conceivable way. Celsus, it is true, proposed to go higher up than the line of demarcation in gangrene, but his plan was scarcely adopted. No great modification can be said to have occurred until the time of Paré. His ligature marks an era of movement. But even this was slow of adoption. He also was fearful of crushing the coats of the artery and protected it. At length the simple plan of the present was confirmed by experience, and as far as the ligature in relation to its action on the blood-vessels is concerned, leaves nothing to be desired. It can hardly be believed that the primitive methods of amputation through the continuity of the limbs could have been made, as they really were, by the mere chop of a huge chisel, or that the bones should have been broken by powerful osteoclasts preliminary to incision. Even after the knife was devised, shaped like a cycle, the sweep was direct to the bone, which was sawed off on its line, thus making a stump in no wise different from that produced by the chisel. One can hardly contemplate without a shudder not only the operation itself but the painful and ulcerating stumps, whose conical points would ever be sources of suffering. As time went on, and we can hardly state the originator of the idea, it was found that the integuments should cover the bone. Then the form of the flap became the subject of endless variation. It does not appear possible to devise any line of cut that has not been proposed. Moreover, it seems if almost every form has its special application. For in the expectation of the future utility of the limb, by the aid of the mechanic, the result of our work has become varied. We no longer make an amputation of the leg just below the knee to fit the sailor's peg, but assume that none so poor that charity will not furnish the substitute. We can choose circular flaps or oval ones,

single flaps, even triple flaps, anterior or posterior ones, lateral or double or single. We can make curved ends or square ones and all having a right to be considered according to the condition looking forward to the form of the stump.

But long antedating the form of the wound, the surgeon had to meet the dangers of hæmorrhage. One is amazed that they came so near the modern plans but missing them. They learned to tie cords around the limb and yet they were insufficient before the invention of the tourniquet. Why not a little tighter? Why not a compress over the pulsating vessel? But it is perhaps in the nature of invention that simple things are passed by for a long time. One of their methods also, was to use a series of bandages to diminish the flow of blood? Why did they wait for Esmark? Even in our own day surgeons have employed a common bandage tightly drawn for this purpose. It must be confessed that from the earliest period down to the last few years there has been but little improvement in the general management of wounds. A water dressing was the method of the Father; but down through the ages every imaginable device in the shape of ointments was used by surgeons, as we find to be the case to-day among the people. The recipes are amusing reading, but not profitable at the present moment. We are not likely to be much instructed by those prescribing the oil of whelps or moss grown upon the head of a thief hanging from a gibbet. Cold water was the favorite application of Galen, who had large experience in the treatment of wounds in consequence of his position as surgeon to the school of gladiators. The wounds were simply drawn together and a dressing of cold water applied. This is the plan that was urged by the famous Mr. Liston, of London, who controlled opinion during the middle of the present century. He objugated the method of covering wounds with ointments and charpie in phrase more emphatic than polite, and carried the surgical wound with him. But until a late period the wounds of amputation were necessarily open ones. The very form of the cut demanded it and when the arrest of hæmorrhage was made by hot irons or boiling oils or caustic buttons of sulphate of copper over the bleeding orifice, no other plan could be thought of. But when the simple ligature upon the artery drawn from its sheath, became the fixed, final form of application, surgeons began to close the flaps to make the cure more rapid by the process of adhesion. This proved to be often successful, as we all know, in modern experience. If the whole surface did not adhere most of it might, and thus the period of time for perfect closure shortened. But we also know that at certain places the mortality became alarming. An old hospital in civil and a crowded one in military practice, became charnel houses. Surgeons at different periods changed their methods and open wounds were proclaimed as far more successful than those that were closed. But the word open wound as generally employed is a misnomer. The wounded surfaces, it is true, are not pressed into contact, and provision is made for the drainage of the purulent material, but these surfaces were still, more or less, in contact with each

other. I do not hesitate to say, that one of our own members who made the first declaration of his method in the Surgical Section of this Association, has placed the question of the management of open wounds upon a perfect basis. It has been usually my custom to employ it since its announcement, and never with regret. There has been no failure, and little or no constitutional disturbance. I refer to Prof. Link's method, by which the bandage restraining the swelling causes the edges of the wound, which should be circular, to rise like an erectile tissue and stand up open to the air; thus making the only genuine air-dressing that I know of. If left unsupported, flaps will drop upon each other. If lint is put on the surface there is the touch of a foreign body. Even the ligatures will increase the suppurating flow when they lie upon the surface of the wound.

As has been stated, the attempts at primary union have seldom been other than partial, till the advent of the modern antiseptic methods. In the early part of this century experiments upon the encysting of ligatures for closing the arteries, were tried and abandoned. The movement from the open wound, of necessity, to the closed one, antiseptically treated with soluble ligatures and sutures, has been long and slow. We had almost come to the definite conclusion to make the open wound as the final judgment of the profession. Hippocrates avoided amputation except in cases of gangrene. In his day it was full of terror. Indeed, there could not be said to be any amputation as we understand the process. Limbs that were crushed or injured by compound fracture were allowed to get well or to mortify. When gangrenous, after the red line was formed, it was made at the border that nature had decided on as the place of separation between the dead and the living. Such delays in the treatment of severe injuries, with our knowledge, would be simply criminal. But when gangrene has occurred, and we wait, as we must, except in certain rare conditions generally understood. I am in accord with the custom of Hippocrates. This places me in contrast with a custom almost universal. But singular as it may seem, an antiseptic dressing will complete the measure of safety incident to the amputation through the dead part. Reasons for this belief are easily stated, and of course are not those founded on the fear of amputation through the living parts as a general measure. But when the red line has formed, nature has already made the amputation. Following an irregular line, which is lowest down in the integuments and bone, separation has been made between the dead and the living tissue. The danger arises from the retention of poisonous fluids in contact with tissues now full of vitality. An operation of necessity can be made, closely following the line of demarcation, and it will be found that the endosteum retains its vascularity nearly if not quite as far down as the integument does. These are the two factors of an amputation indispensable to its success. The muscles, and especially the fascia and aponeuroses, as well as the periosteum, are apt to die. Deep recesses following the connective tissue will be filled with pus and septic fluids. The amputation may be made as de-

scribed, with far better hope of success, than higher up through the living tissues. The special dangers of amputation through them are avoided. There are no vessels to tie, there is no fresh absorbing surface to be poisoned by its own secretion, there is no danger from hæmorrhage, and more than all, in the enfeebled condition of the patient, there is no shock. The deep recesses are now exposed, and can be cleansed. Absorbent cotton, moistened with a solution of mercuric chloride, pushed into the open spaces, at once attracts, by capillary attraction, all the fluids. When the succeeding dressing is undertaken, it will be found that every part has the appearance and indeed the reality of having been washed clean. The irregular surface is, however, a granulating one, and for this reason alone has become one that is essentially protected from the dangers of sepsis, as soon as a free escape of the fluids can be effected. The periosteum, if destroyed, may result in necrosis of the outer shell of the bone. But the endosteum will maintain it in its integrity, sufficient for the length of the stump. The wound being necessarily an open one, closes slowly. It will be seen that the observation which I urge upon your attention, is a return to the ancient method, with two thoughts added to it which, in my judgment, should change our practice in these cases. They are, as every surgeon knows, fraught with great danger when the amputation is made above, in the living tissue, for the shock of amputation in the enfeebled state is frequently fatal. The custom of the ancients was to pick away the dead part and divide the bone high up. They were anxious to disarticulate, if the line of separation had gone to a joint. One stands aghast at the shapes their stumps must have assumed. In recommending the open wound, in these cases, I only do so at points where a proper stump can be made. Take as an illustration, gangrene commencing in the foot and stopping on the leg four or five inches below the knee. According to our custom the amputation must be made through the thigh. But the danger of such an amputation is vastly more than by the Hippocratic method, at the red line, and the lower stump is far better. The choice, in my opinion, should be made at the red line if possible.

The advent of the gun-shot wound, appeared at a time when the practice of surgery was at a low point; and the effect of the "villainous gunpowder" was regarded with just grounds of terror. The terrible results were ascribed to poison. Both the lead and the gunpowder were poison. How could such fatality occur unless from poison? Poison wounds should be treated with the hot cauterizing iron or boiling oil, to destroy the infected surface. The bullet must be extracted, if it be possible; its poisonous character could scarcely be borne by the constitution. The surgeon with such views would be apt to complete the work of the soldier. But time reforms medical as well as other opinions. If easily extracted, all foreign bodies should be removed, even with the present views of the innocuous character of the bullet. This has always been accepted, and expectation has been the practice for a long time. But now we have antisepsis of the track and careful

covering of the wound, to guard against microbial invasion. How far this may be carried is yet unknown, but great advance has already been gained. It is, however, of recent date that the greatest steps have been taken in the management of this special form of wound. Among the most notable are those announced from this platform. The facts are all known to you. The great cavities of the body have heretofore been deemed unapproachable. It was believed that the surgeon, if he undertook their exploration, would render certain what was almost sure to happen. In gun-shot wounds of the abdomen there might, perhaps, be one life saved, while ten were lost. Why should this meagre hope be denied? But all this is changed. I do not report, but only allude to the marvels that are detailed by Drs. Parkes and Senn, marvels that we could only know by the use of vivisection, which fortunately has not yet been submerged under a sea of maudlin sentimentality. Here, again, we have the triumph of cleanliness. A gun-shot wound of the intestine, will inevitably result in the expulsion of some of the contents of the bowels; the vermicular motions of the intestines will surely secure this result, even if after a while these motions are arrested, in obedience to the law of inflammation. These cases of recovery were probably those where a fortunate apposition of the wound near the abdominal walls, circumscribed the area of pollution and nature's active efforts at repair complete the line of circumvallation. The case of the insane woman in Utica Asylum, who punctured the abdomen and drew out a piece of the small intestine, fourteen inches long, and cutting it off with a pair of scissors, threw it on the floor, is widely known. The physician in attendance knew of nothing but expectation in such an emergency. He drew the edges of the abdominal wound together and waited the event. No remarkable symptoms supervened. The recovery was complete. Many years after an autopsy revealed the fact that the edges of the intestinal wound had been fastened to the abdominal wall. But such results are too rare to be guides of conduct. The new methods are already accredited with improvement, and as the courage and better diagnosis of the surgeon improves, we will inevitably place the treatment of these wounds by laparotomy upon a sure foundation. Every surgeon has seen cases of strangulated hernia where gangrene has supervened, and will bear testimony to the fatal character of the injury. Now, for the relief of this condition, enteroraphy comes in to take its place as a recognized operation, with large increase in the saving of life. Again, cleanliness is the pivot upon which the whole movement turns. It seems incredible that the peculiar kind of filth that invades the peritoneum in gun-shot wounds of the intestine, can be removed sufficiently to secure even such results as have been obtained. Antiseptics of proper strength over this immense surface are dangerous expedients. Are we to see a stream of distilled water, rendered properly saline, carried into and out of the peritoneal cavity long enough to insure cleanliness? Are we to irrigate the surface after inflammatory exudates have actually appeared? The possibilities seem large.

That these exudates, when extensive, will accompany a fatal inflammation without the formation of the dangerous ptomaines of microbial creation, it seems to me to be manifest. In the experiments by Dr. Parkes on dogs, one fact is to be specially noted; the frequency of the existence of entozoa and their migration through the wound. It has been my fortune to witness two deaths from rupture of the intestine by external force, without a wound of the abdominal wall; not even a break in the parietal peritoneum. One was in a child of 6 years of age; the other in a man of 40. The child died in twenty-three hours, and the man in twenty-six. Autopsy revealed a fact exactly the same in each case. The fibrinous exudate of a character sufficiently firm to be lifted upon the handle of the scalpel had extended over the whole surface of the peritoneum, even to its remotest corner. It is a little odd also that a single lumbricoid had crawled through the opening in both cases. The fibrinous material had probably acquired its firmness many hours before death. It is hardly credible that much pathological change could have occurred during the latter hours of life. But we were harassed with doubt whether laparotomy should be undertaken in the gun-shot wound, for it presents unusual dangers from the necessity of handling the intestines from end to end, merely to settle the diagnosis. With all the improvements of the modern methods of making the abdominal section the surgeon has still shrank from the responsibility. Now, today at the supreme moment, Dr. Senn places the diagnosis of the gastric intestinal canal upon a sure foundation, literally purifying it with fire.

Just fifty years ago, during my student days, I had the pleasure of an invitation from Prof. Mutter to witness the first operation on the Tendo Achillis in Philadelphia, and as I believe, on this continent. It was his second operation. The antecedent one was upon the ham-strings. Still a young surgeon, he was especially patronized by Dr. John Ray Barton, who upon the then recent death of Dr. Physic, was by common consent recognized as the surgical chief of Philadelphia. Dr. Barton protested vehemently against the operation and refused to witness it, being unwilling to give his countenance to anything that was so dangerous. It would certainly blight Mutter's prospects in life. Moreover, the interests of the patient should stand first, and he could not be a party to anything so contrary to good surgery. The great fact of the protected immunity from suppuration when subcutaneous incision is made, had not yet impressed itself upon the surgical mind. The vast value of direct repair had acquired its recognition under the guidance of John Hunter, but the value of the subcutaneous cut was not appreciated. This marks one of the most magnificent of all surgical movements. The rationale was to be explained today. Antisepsis is the legitimate descendant of the subcutaneous cut. The tenotomy would almost surely be cleansed as it passed through the skin and the minute wound would be washed by the few drops of extruded blood. This was clearly our antisepsis.

Was not Dr. Barton justified by his experience? With our knowledge, his conclusions reached the

depth of absurdity. But had he not seen tendons sloughing when exposed to the air? Had not cases of accidental incision of the Tendo Achillis been reported often enough to prove, that if the life, always in danger, was preserved, the limb was likely to be useless from the loss of its great tendon? The surgical world woke to a great fact; and strabismus, torticollis and all contracted tendons came under the surgeon's knife, until it became almost a craze when Guerin, for the relief of lateral curvature of the spine, cut every spinal muscle and tendon that he could define, until the chain of bones could be moved like a serpent's back.

At the meeting of the New York State Medical Association last September, I led the discussion upon the proper method of treating compound dislocation of the ankle joint. I found the opinions of surgeons on this point very indefinite, with a strong, even an uncompromising judgment in favor of amputation; notably by Prof. Gross who would make rare exceptions to this plan. Others advised reduction and a few relied on resection, some, of the tibia and fibula with removal of the ends of both bones with their malleoli, while others removed the surface of the astragalus also. Even the most modern writers left the whole subject in a vague way to the judgment of the practitioner. These authors were quoted to show their various opinions, but it would be out of place in this paper. For a long time I had been convinced of the great wrong inflicted by these teachings, which were founded on the statistics of hospitals in large cities before the day of antiseptic surgery. Such advice was even then not applicable to the condition of life in the country and smaller towns where purer air and better constitutions existed together. I had used resection with good results in three cases, and had seen two cases, in consultation, which had been simply reduced by the surgeon in attendance. The latter made good recovery after a considerable constitutional disturbance, but by ankylosis. But before writing my paper, I had the good fortune to see a case that had been treated by a young friend, (Dr. P. G. Udelli), which seemed to mean almost ideal result. The foot, movable through a little more than half its normal extent, and free from pain in walking, was enabled to execute its function by the formation of a flail-joint after the resection of an inch and a half of the tibia and fibula. The novelty of the method, consisted in leaving the two malleoli attached to the astragalus and bringing their fractured extremities in contact with the resected end of the bone. Granulation was the result of course. Drainage and carbolic acid solution were employed to secure antiseptic results. Permit me to quote my own paper, which gives a *résumé* of my judgment in these very grave wounds.

"One of the greatest triumphs of surgery is the marvelous utility of the arm after resection of the elbow-joint. This flail joint, as I have been in the habit of naming it, can execute all the motions of the normal one if we are careful in its training during the period of its perfecting. The case I have cited, illustrates a possibility of a similar result in the ankle. Should we not then regulate our treatment with this

end in view? Let us for the present leave out of consideration any complications, such as may arise from rupture of the posterior tibial artery, proceeding with our plan even if there be a rupture of the anterior tibial. Also, leave out those cases where a great crushing force has compressed the soft parts as well as luxated the joint, which would almost necessarily produce gangrene. The most common cause of this injury is a fall from a height upon the foot, as jumping from a carriage when in quick motion. The foot coming in contact with the earth and then held, while the body is in motion, almost surely induces a spiral twist, which, with an inclination of the leg at an acute angle with the ground, produces the break of bones and rupture of soft parts. The end of the tibia is thrust into the ground. Two of these cases were from jumps from the carriage when the horses were running. Bad as such conditions are, they are not apt to produce much destruction by gangrene. Such a condition of the synovial membrane cannot be remedied but by supuration, if reduction is attempted, no matter how much care we may use in cleansing or antiseptic dressings. But there are cases where there is only a rupture of the soft parts and ligaments, and the joint is barely opened and moderately displaced.

"I am disposed to lay down a formula thus for the cases of the mild character just mentioned: Let the clothing be carefully removed. At once apply a sponge with a bichloride of mercury solution, 1 to 1,000. With a lens inspect the part to discover foreign particles, under these circumstances most likely to be lint. The tenacious synovia picks up at once particles of what it comes in contact with. These can be removed with antiseptic sponges held in antiseptic fingers. The edges can now be neatly apposed with fine sutures of carbolized gut, after the bones have been replaced. It is not absolutely necessary to use a splint of plaster of Paris, but I confess to my partiality to it on account of its immobility. A double-inclined plane is a very good appliance. But before its application the leg around for several inches should be shaved. I would then apply absorbent cotton, wrung out of a solution of the bichloride mentioned, and cover the surface, over which an antiseptic covering should be placed. This is a bid for adhesion, of course, though it is seldom to be expected.

"But let us regard the more usual form, as described before. Let us assume that the malleoli are in place as far as the astragalus is concerned, but broken above; the end of the tibia thrust into the soil. It is surely idle to hope that any amount of cleansing can prevent supuration. The procedure, in my opinion, should always be resection and, if the astragalus be not broken, only of the end of the tibia and fractured end of the fibula. From one-half to a whole inch of the bone should be removed. Of course the most careful cleansing should not be omitted. The ends of the fractured malleoli should be joined to the bones above by catgut carbolized sutures, drawn through holes drilled in each end. This only for the sake of absolute apposition, which might be disturbed in the necessary handling during

the application of the splint for permanent retention. The edges of the wound can be brought together at what would be the upper part when the foot is at rest, while the lower is filled with a drainage-tube. I should scarcely be satisfied with any appliance for securing the proper position except the gypsum bandage, with a large opening for the requisite dressing. That the foot should be placed at right angles with the line of the leg need not be told to this audience. In consequence of the resection this is easily borne. Where there has been reduction without resection, the position is painful by increasing the pressure upon the inflamed synovial surfaces. The surface of the wound and surface of the skin for two or three inches around should be covered with some antiseptic dressing, of which absorbent cotton, saturated with the bichloride solution, is to my mind sufficient.

"The drainage-tube offers an easy access to the depths of the wound, which should be washed by an antiseptic solution, of which carbolic acid may be the most safe, as well as sufficient. Let us suppose the progress favorable, the rise of temperature moderate, as well as the other constitutional symptoms. We have a right to expect union, commencing at the point of contact at the centre. The straight line of the saw-cut on the tibia applied to the convex surface of the astragalus at once comes in contact with it, while the surfaces on each side are to be filled by granulations. This condition permits the motion that is so often the result of treatment by resection, and should be cultivated more early than is commonly attempted. The stage of danger is during the early period. When the granulations are filling up the spaces, change of position should be undertaken. This is my constant practice in the treatment of the similar condition of the elbow joint. A slight change in the angle of the foot toward the leg could be made every second day, so slight as not to disturb the process of repair. This can be carried on until the extension of the foot is as complete as that of the sound one. Slowly the foot can be carried down to extreme flexion. To accomplish this purpose, a splint hinged at the centre of motion and controlling the foot and leg can be substituted for the rigid plaster of Paris.

"I cannot but believe that a successful result would follow as the rule from such a procedure. The danger of resection with these appliances can hardly be more than a Syme's amputation. The bone cut is the same, and is probably not more susceptible to the septicæmic infection than the synovial face of the astragalus. If, however, the case is showing a dangerous decline from excessive temperature and fever, with too copious supuration, we have the resource of secondary amputation.

"But let us suppose that the conditions are not so favorable, the comminution of bones considerable, and the soft parts much lacerated and contused. There has been no doubt then of the propriety of amputation. Must this sad resource be the only one we have before us? My advice is still for conservation. The danger from bone comminution is comparatively trifling. The fragments must be removed; the resection may be two inches or more, instead of

one inch, from the end of the tibia, and yet produce the most splendid result. The great danger comes from the sphacelus of soft tissues, especially if there is hæmorrhage from an artery of some size. My experience in the use of warm water to preserve the circulation in injured tissues has been so different from that which I had before warm water as a persistent agent had been so generally employed, that I am constantly astonished at its efficacy. Even when I know that the tissue of a foot or hand is destroyed, I cannot always feel secure of my flaps at the point of election. I recall two cases of boys over whose feet car wheels had passed, but not injuring the heel and ankle. But as this cannot be absolutely known, the proper method is obviously to amputate above the ankle. But the great superiority of the stump after Syme's operation induced me to keep the feet in both cases in warm water for six days. In each of them a sufficient flap was secured. The dead tissue was defined, and without alarming symptoms. But it is with no desire to obtain a flap after gangrene shall have supervened that I cite this experience, and I would not delay the use of the last resort a moment after the occurrence of gangrene. But it is the marvellous effect of warmth to save the vitality of injured tissues; and as this can be used in connection with the antiseptic measures, the case would be a bad one indeed where I would employ amputation as a primary measure.

"The introduction of the foot into warm water necessitates a dependent position, and this is one to be deprecated. To avoid this inconvenience, an anterior metallic splint may be used for the first week, which, being raised from the bed, allows every convenience for the drip and avoids the painful droop of the foot. My habit in the employment of water for both the ankle and the knee is to envelop them with cotton, and then surround the whole with an elastic rubber sheet. Upon the top of the cotton the water can be poured from a pitcher or fountain syringe at short intervals, avoiding fluctuations of temperature. This water may be rectified with the bichloride of mercury, 1 to 5,000. If gangrene should supervene, a secondary operation can be made without the delay for the red line of separation. That there are cases of luxation so complicated with extensive laceration that no question of the propriety of amputation need be asked, is certain; but I urge the profession to lean to the side of mercy."

Six months' reflection and experience has induced a change of opinion. I would, in nearly all cases, reduce and rely on the power of cleanliness and antiseptics. There are those, of course, where the crush is so severe that there can be no doubt. But when the rupture is great better opportunities are given for the inspection of the surfaces than when the opening is small. The resection may be secondary and the amputation tertiary.

The microbial discoveries of Pasteur and Koch and their disciples have placed all of our therapeutics on a new basis. I will not detain you in speaking of them; the subject is too trite. We hear now of little else. No one knows, when a real discovery is made, how far it will reach. It always seems to run like a

thread through the woof of all knowledge. How can we measure the scope of a piece of glass ground to a lens? The spectroscope was a mere philosophic toy at first. What now: the analyst of the sun as well as of the blood. No one can now measure the possible triumphs of surgery. That which was excellent yesterday must be abandoned to-day. I confess, after long years of practice, to a delight that has the glow of youthful enthusiasm when making a resection of the knee under the use of mercuric chloride and closing up the wound with silk sutures, and applying drainage-tubes in each corner of the wound, and then covering the whole with absorbent cotton saturated with the same microbial enemy; to remove the whole at the end of two weeks with complete closure, every suture encysted, and not a drop of pus. Of course, there was no fever, only physiological repair. Or even to witness, perhaps, a more difficult feat in a much more common condition, the neat apposition of the tissues of a hand lacerated by machinery, while a stream of the antiseptic solution flows over every part, and the retention of these tissues in their proper position by sterilized catgut, the whole protected with absorbent cotton saturated with the solution. At the end of a fortnight the sutures have disappeared, the repair is complete, without a drop of pus. Such are now the experiences of all of you, and need no enlargement of statement. The surgical atmosphere is now antiseptic. Lister must take his place beside Jenner. For the time, he has added a word to the language, and we do not mean merely carbolic acid and the spray, when we speak of Listerism. There is already a wide range of material to choose from. It is, however, obvious that there is a constant tendency towards the employment of the mercuric bichloride, notwithstanding the objection raised by Prof. Billroth and his preference for iodoform. Its accessibility, its inodorosity, and enormous powers as a germicide will easily account for this. The natural fear of its powerful toxic effect has rendered us all cautious, but more knowledge of good methods is expanding its application.

Who has not dreaded the care of a compound fracture of the thigh? But now we have report by Prof. McEwen of 1000 cases of osteotomy and no bad results. Who a few years since could have accepted the statement, that the bone could be cut and crushed, the surface broken and driven into the texture of the bone above and below, and yet remain absolutely free from the danger of necrosis and ready for union? The operation is essentially subcutaneous. But Dr. Hahn, of Berlin, boldly incises the soft parts and exposes the surface of the tibia under a stream of mercuric solution, regarding this operation as secure as the subcutaneous cut, and as the parts can be seen they are more susceptible of proper management. In all these cases merely the quiet necessary to physiological repair with its antiseptic covering comprises the after-treatment. Its simplicity and rapidity of result amazes one. Perhaps, however, the best illustration of the value of the treatment that renders wounds aseptic is to be found not in those McEwen has made, but in those that have resulted from accident, which we recognize

as compound fractures. They are at the deepest part of the limb and present every form of wound in the same case known as incised, punctured, lacerated and contused. They have always been the terror of the surgeon. At present the record of the triumphs of antiseptic surgery flows from every hospital. It would be burdensome to quote much, but the tables of Volkmann give at a glance the whole history of the modern leap in surgery. It has always been the misfortune of old hospitals to be the places where the greatest mortality would ensue when a wound was to be treated. It is not necessary to enforce this statement by any large collection of statistics, but I cannot pass by the consideration of this subject without quoting the extraordinary tables of Volkmann. He has collected the facts from the hospitals of Germany and England, and found that the results in all were similar in a very remarkable degree. He found that of 885 compound fractures of the limbs, 339 deaths resulted, whether preserved or amputated, being 38.50 per cent. This in civil life. In military hospitals the percentage was 23.6. The difference may be easily accounted for by the fact that many of these were recently constructed and often extemporized, and also that the average age of the subject was during the firmest periods of life. The approximation in results in the various civil hospitals is shown very simply.

Baum, in Göttingen,	the mortality was 38	per cent.
Billroth, in Zurich,	" " 38.7	"
Breslau,	" " 40.5	"
Halle,	" " 40.6	"
Bonn,	" " 41.8	"

Since the adoption of an antiseptic method, Volkmann makes report of 75 cases in 73 patients with compound fractures and many with injury of the joint, and not a single death. Of these there was the extraordinary number of 21, or 28 per cent. of all cases. Eleven of these were treated conservatively, and there was but one that resulted in ankylosis. One was a shoulder-joint which was resected. The elbow-joint was opened six times, of which there were made one primary, and three secondary resections. Two were treated conservatively. The knee-joint was opened four times and treated conservatively. The ankle was opened six times. Two were treated by secondary resection. One by amputation. Three were treated conservatively. The management was simple. In the first place protracted drenching with water, the removal of spicule and trimming sharp ends of bones, enlarging the wound always enough to allow exploration with the finger, and then causing it to gap by retractors, while the drenching was going on, not stopping until the last coagulum was disposed of. Then completing the irrigation by a drench of carbolic water. After the proper replacement of parts the whole was covered with abundant layers of carbolic gauze, and kept free from accumulation of fluids by drainage tubes. Most of the cases were seen within a few hours after the injury. Five, however, were treated after delay of forty-eight hours.

The great achievement of the day, however, is by common consent the marvelous growth of laparotomy. During my early career the removal of an ovarian

tumor, notwithstanding McDowell's success, was stigmatized as murder, which indeed it seemed very often to be. Dr. Atlee was fiercely denounced for his efforts to bring this operation into the ranks of legitimate surgery, which he lived to see fully established. But through what a valley of death have the wonderful results been obtained. It is now but 14 years since Keith electrified the whole surgical world with the report of 10 consecutive cases and only one death. Two years after Dr. Atlee remarked to me, after performing an operation of this kind, that if it should succeed it would be the tenth consecutive good result. It, however, failed. By what slow approach have we arrived at the present simplicity of operating. The manipulation is simple, but delicate beyond the necessities of ordinary surgery. How difficult to apply what we call experience. Surely every surgeon had seen enough of the danger of opening the peritoneum to fear its terrible inflammation which we have often seen run over the whole immense surface, even to its remotest recesses, beginning at a wounded point. Experience was ample. How could we dare to defy the results of such knowledge? But from the recognized fatality of the tumor, and the distressing condition under which life was maintained during the latter period of its existence, we should have known but little of the dangers to be avoided and how to combat them. How long a time it required to learn, that after all, it was not peritonitis that we were chiefly to fear. We had to learn that the whole immense surface was but little else than the expansion of the lymphatic system, as the skin is of the nervous one. And when the blood mixed with the contents of the sac, that have been left behind, excited first a secretion from the surface for their solution preparatory to their absorption according to the natural law for their disposal through the blood, we encountered on the autopsy the fearful red serum. Too much was to be done. Even our therapeutics mislaid us. I still accept the correctness of the opium treatment in genuine non-traumatic peritonitis. We owe a great debt to Dr. Alonzo Clark for the careful development of its excellence in this condition. But our pathology was a mistaken one, and I cannot but think that the mortality is increased in the cases first mentioned by the use of opium. How much to unlearn and how hard in the face of our experience? Who has not looked into the peritoneal cavity during an operation and hardly dared to touch it, preferring to leave some blood and sac contents, rather than touch the inflammable surface. But the death of Keith's eleventh case struck the key-note. The peritoneum must henceforth be clean. To our astonished gaze the membrane could be sponged and washed and dried, and then it quietly removed the small amount that the sponge could not absorb. From this time the death-rate diminished in the hands of every operator, and the note has become universal that the basis of all antiseptics is cleanliness. Even the exudates from peritonitis must be removed, according to Mr. Tait, who has for this condition washed out the cavity with water that flowed from the city tap and which, according to a friend with microscopic knowledge, contained "thirty-six

different kinds of beasts." "You reject antiseptic medication," said I to Mr. Tait, who replied: "Yes, it is all rubbish; there is but one antiseptic that I know of." "Pray, what may that be?" "Soap and water." Again it is cleanliness. It would be idle to say that surgeons did not esteem cleanliness as going a long way before Godliness in operations. But it was not of the precise and thorough kind that was demanded. I will leave the statistics that Mr. Tait has given us out of our consideration. They transcend those of all others who have undertaken to follow in his footsteps; so as to lead one to believe that there are some problems unexplained. The operation for the removal of an ovarian tumor is by common consent, in its various conditions, at times the most difficult one of execution that ever comes under the hands of the surgeon. At other times it is the type of simplicity. These circumstances give an opportunity for a wide difference in the results of operative procedure intended to be similar. There is a preponderating opinion that direct antidotes to the processes that seem to control the poisonous results of suppuration, increase the percentage of favorable termination in cases that have been operated upon. Their use marks another step in the treatment of wounds accompanied by exposure of the peritoneum. Mr. Tait's results are to be regarded as unique, and surgeons are not likely to omit proper antiseptic measures. We are still in the midst, of change, but the splendid record of expert operators, as we all know, has removed this operation from a mortality that seemed murderous to one that is less than any operation of a capital character. That this result has been obtained by constant attention to the action of natural law is too obvious to be denied.

Several years since I removed a uterus containing a fibroid weighing seventeen pounds. The cut extended nearly the whole length of the linea alba, before it could be drawn through it. The vessels were ligated on the sides and then I carried out my device for managing the stump, and guarding the peritoneum from the presence of the dreaded foreign body in the shape of ligatures or sutures. A slight incision was made all around the huge mass about three inches from the vaginal junction. This was dissected down and all around to nearly the point above mentioned. The vessels were easily seized and the blood was readily prevented from passing into the cavity of the peritoneum by the cup-like form of the cut. Amputation was made about an inch from its junction with the vagina, and at this point it had of course become small. But little blood flowed from this last procedure, for the vessels had already been secured. After hæmorrhage had ceased the edge of the cup-like pedicle was pocketed in the linea alba. Thus peritoneal surface was brought against its congener. The intestines had fortunately been kept covered by the abdominal walls. Union of the wound in the linea alba was perfect. A drain down through the neck of the uterus seemed to me the most perfect of appliances. I fondly hoped that this was all that could be desired. But I had at this time no means of antiseptics. Now Péan, as reported by Dr. Senn, closes over the stump with catgut su-

tures, after having extirpated the mucous membrane of the neck, and brought the abraded surfaces together by a sort of autoplasty, and drops it back into the pelvis. As an operative procedure this seems to me to be final.

But the exposure of a joint to the atmosphere is far more apt to result in inflammation, with a tendency to suppuration, than the peritoneum. But now we follow the nests of bacilli into the joint with the sharp spoon, and filling all nooks with an antiseptic solution, close the capsule with an assurance of freedom from any active inflammation, especially of a suppurating form. This is surely one of the most extraordinary triumphs of antiseptics.

I must not omit, in this sketch, the important step in advance that was declared in the papers of Prof. Andrews and Dr. Watson, delivered before this Association last year, on the treatment of carious wounds by the use of a solution of hydrochloric acid 1 to 20. *A priori*, every one felt that such a strength of acid must be so irritating as not to be tolerated. But coming from such authority, I at once adopted the method, and I desire to say that I regard it as one of the great advances in surgery, free from danger or even irritation, and replete with power. Moreover, we have at the same time an agent that removes the dead and does not injure the living bone, and is also a valuable antiseptic.

Neither must I fail to speak of one of the stages in the progress of research which is marked by the attempt to obtain sterilized air. As we all know, Lister's spray has occupied the largest place for this purpose, with a reputation much waning, and entirely abandoned as worse than useless in laparotomy. Let any one make the experiment of throwing the spray upon a plate of glass for a few minutes, and he will find, by the employment of a lens, that the rush of the vapor has drawn in and deposited upon the glass every floating particle in the atmosphere, thus concentrating the minute foreign bodies instead of dispersing them. Independent of the poisonous carbolic acid, rapidly absorbed from the large surface of the peritoneum, we would make a special deposit of foreign bodies, which, though minute, would be aught but useful. But long before Lister's time, a plan of enclosing the part to be operated on in an atmosphere of nitrogen was attempted. The difficulty of executing the procedure to a successful termination arrested the experimentation. Many years since I myself entertained the hope that benefit would accrue from the pouring of carbonic acid gas over the wound and into the cavity during a laparotomy, thus excluding the atmospheric air. But without sterilized hands and other necessary apparatus, the method was comparatively useless, and with the proper antiseptics became comparatively unnecessary.

We also find Dr. Prince sterilizing the atmosphere of the whole operating room, and a Boston hospital supplied by air from the roof, which, being carried to the basement, is passed over heated plates in winter, and thence distributed over the building. Burning sulphur is a common method of preparation with which all are familiar. Perhaps we may yet choose

a room whose air shall be purified by its passage through sterilized cotton, or through tubes in imitation of Tyndall's glycerine box.

It is the glory of the time that really great men among us are not so marked by a wide separation from their colleagues, such as prevailed one hundred and fifty years ago. Then there was but one John Hunter, and he remained without peer, and with few followers. Meeting one of his contemporaries when he was carrying home some pig's feet from the market, for the purpose of anatomical inquiry, he was sneered at for busying himself about pig's pettitoes. To-day, the pettitoes on such a mission would be enclosed in a nimbus. We now have a Koch who leads, but there is a large following close at his heels. We have Atlee and Spencer Wells, but almost at once their followers appear everywhere and outstrip their teachers.

We sometimes hear pessimists declaim against the methods of the profession, and summing up their wild statements in the compendious anathema, that the world would have been better if the practice of medicine had become extinct. Our modern methods have not been long enough in use, to attract the kind of folly, that denounces vaccination, but it will appear. When pointing to the vast benefits that mankind has received from the labors of the medical profession, we naturally place at the head the trifling operation of vaccination. This is a contribution of surgery. Next to this stands the practical extinction of scurvy, which decimated the crews on long voyages, seriously crippling commerce. This result must be placed to the credit of the hygienist. Koch is credited with the assertion that the student will soon only know septicæmia by description, as he now knows scurvy. This is the addition to science furnished by the bacteriologist. But this is rendered the greatest boon of all by the surgeon. It is the crowning achievement of modern science, that we have already returned two of the greatest scourges of mankind to the box of Pandora, with a reasonable prospect of adding a third to the list.

It seems incredible that surgeons could have been at any time united in a guild with barbers. The connection in England was severed in 1742, while Mr. Pott was in active life, a man of culture, who has left his mark permanently upon the art. But the surgeon stood in rank far below the physician, and at one time was not allowed to make a surgical operation without the consent of the doctor. But at present it seems as if the future of the profession must be largely surgical. With a single bound the limitations set up by the physician have been pushed aside. The surgeon opens the various cavities of the body, not only to repair injury, but to remove the results of morbid processes. If the physician fails to rectify the abnormal chemistry of the enlarged spleen, the surgeon removes it. If nephritis and pyelitis with organic disease in one kidney is bearing the patient down, the surgeon takes it away. If disease obstructs the bowels, he cuts it out and joins the healthy ends of his cut. If the lungs are the seat of abscess he punctures and drains them. If the brain has an abscess pressing on it and en-

dangering life, he punctures, drains and renders the wound aseptic. It is difficult at the present moment to define the possibilities of modern surgery. It is a fit representative of the time we live in; the combination of science and action.

ORIGINAL ARTICLES.

TRACHEOTOMY IN MORPHINE POISONING.

Read before the St. Louis Medical Society, March 21, 1888.

BY FRANSFORD LEWIS, M.D.,

ASSISTANT SUPERINTENDENT OF CITY HOSPITAL.

About four months ago, I read in the *Medical Review*, a short account of the resuscitation of a physician of Vienna, from opium narcosis by means of tracheotomy and forced respiration with a bellows. It seemed to me to be a rational and feasible procedure, and I determined to try it, should the opportunity present itself.

On the afternoon of March 11, 1888, a young man was brought to the City Hospital in an unconscious condition. It was reported that about an hour previously, in ending up a debauch, he had taken an ounce of laudanum with suicidal intent.

His condition then was bad; cyanosis was marked, the pulse was proportionally weak; and respiration, already shallow, was rendered difficult by the accumulating mucus in the trachea. The pupils were minutely contracted and immobile; extremities cold. The treatment usually carried out in the hospital in such cases was adopted; one-hundredth of a grain of atropia, and several syringefuls of whisky were administered subcutaneously, the syphon-tube was passed into the stomach, and that organ was repeatedly washed out, at first with water, afterward with strong coffee. The flagging respiration was stimulated by douches of cold and hot water alternately dashed over his chest, and to the same end the Faradic current for a time seemed to be of benefit. But notwithstanding our efforts, narcosis became more profound; cyanosis was intensified to a degree which I have seldom seen, and efforts at respiration on his part ceased entirely, so that artificial respiration was substituted, effectually at first, with much less success afterwards. It became evident that unless something radical were done, and that, too, immediately, the patient could not last. I bethought me of the bellows method.

The patient was hastily removed to the amphitheatre, where, with the kind permission of our superintendent, Dr. H. C. Dalton, I performed tracheotomy as rapidly as possible, during which only a gasp was taken now and then, probably two or three to the minute. On separating the severed cricoid, a deep inspiration was followed, as is usually the case at this stage of a tracheotomy, by a considerable interval of quietude. We were about to insert the tube connected with the bellows, when a second gasp produced such a shock on the bronchi by the direct impact of cold air on their mucous surface, that violent coughing was set up, expelling with

each spasmodic expiration, mucus which had collected in the trachea to a considerable amount. By this means the tube was soon cleared of its contents. Coincident with the violent coughing, of course, deep inspirations were taken, just the object aimed at, though attained in an unexpected manner, without the use of the bellows; change for the better began almost immediately. The dark purple countenance gradually paled under the more vigorous action of the heart—however paradoxical that may appear at first thought—and efforts to speak evidenced returning consciousness. A piece of moist gauze placed over the tube, acted as a filter to the inspired air. Injections of stimulants—whisky and ether—were continued at intervals, and another hundredth of a grain of atropia was given, after which the patient was removed to his bed and subjected to frequent and vigorous stirring up when respiration was inclined to flag—and it was so inclined for the next several hours.

Sleep was not prevented, and he was soon wrapped in its soothing embrace.

On the following morning the tube was withdrawn and the incised membrane and cartilage were sutured, the rest of the wound being allowed to granulate.

I should like to be able to close the record of this case *a la mode* with the statement that recovery followed without a bad symptom, but I am prevented from doing that by the fact that four days after his entrance into the hospital, the patient became subject to delirium tremens, from which he died thirty-six hours later. The presence of pneumonia or other complication of that sort was definitely excluded by post-mortem examination.

It may be suggested that possibly the patient might have recovered even after several stoppages of natural respiration, such as the one which precipitated the operation, ordinary methods of artificial respiration being employed. I, too, believe that possible—but not probable, a fact but too often demonstrated in cases of that kind.

I have seen not a few patients with vastly less cyanosis, with at times stronger pulse and more vigorous respiration, succumb under the continued use of that treatment.

And the procedure could add no complication to the already critical situation; on the contrary, it could only be of benefit, by allowing a free vent for the cause of that ominous sign, the tracheal rale, and by shortening and simplifying the channel of communication between the lungs, and that all powerful life-giver "fresh air." As hinted at above, the direct influx of unwarmed air would seem to be no mean factor in conducing to the desired end. Should respiration not be reestablished, or fail after its repeated reestablishment, it would be easy enough to insert into the tracheal tube, a tube connected with a bellows, by which the lungs could be forced into activity as long as desirable.

In searching for literature on the subject, the *Index Medicus* directed me to only one article referring to it, that of Dr. G. E. Fell, in the *Buffalo Medical and Surgical Journal*, for November, 1887. In it the author reports the successful treatment by

means of forced respiration with bellows, etc., of a patient who had been poisoned by morphine for a longer time than the one to whom I have called your attention. The narcotism in the former case seems to have pursued a course not so rapid as that of the latter. The apparatus used was the one usually employed in the doctor's physiological laboratory in the performance of artificial respiration on dogs.

The operation was done on July 24, 1887, prior to the one performed at Vienna, and was therefore, so far as known, the first on record. Since then, Dr. Fell has used the treatment with success in two cases, both of which required the prolonged exercise of forced respiration.

In view of the results of the hospital case, I believe that in morphine poisoning, where other means fail, even though it be impossible, on account of the lack of apparatus, to supplement it with bellows respiration, tracheotomy is a wise and justifiable measure.

CORROSIVE SUBLIMATE INTERNALLY IN PUERPERAL AND OTHER SEPTICÆMIAS.

Read before the Gynecological Society of Boston, February 9, 1888.

BY C. W. STEVENS, M.D.,

FELLOW OF THE BOSTON GYNECOLOGICAL SOCIETY, OF THE AMERICAN ACADEMY OF MEDICINE, ETC.

I was first led to use corrosive sublimate internally in puerperal septicæmia by observing its beneficial effects in diphtheria. The principle on which I base its use was announced in 1884, at the Medical Congress in Copenhagen, by Dr. Bouchard, who then made this statement: "Medical antiseptic therapeutics does not propose to kill the microbe, but only to stay its pullulation. Even slight modifications in the human infected organism may prevent the indefinite multiplication of certain microbes which have invaded it."

It was found by Roice, of Utrecht, that in any suppurating focus microbes are found in the blood and kidneys. Dr. H. J. Garrigues, in his paper on puerperal fever in the genital tract of puerperal women, has endorsed this view by recommending, in addition to local treatment, "carbolic acid, sometimes combined with the compound tinct. iodine." If we can hinder the proliferation of microbes, or render them inert, is it not as important as their elimination from the system? Dr. Macan, in his report of the Rotunda Hospital for 1883, declares that he knows nothing which will quicken the elimination of the poison from the system in hetero-genetic infection. In cases in which the source of poison is hetero-genetic I am accustomed to attempt to sterilize the air in the patient's room by means of iodine vapor. I place iodine sales in cups with a little alcohol and suspend them around the room. The fumes are not disagreeable nor very irritating, and are well borne. I have used bromine, but find it rather troublesome to the throat.

My initial dose of corrosive sublimate is $\frac{1}{48}$ grain,

and if any looseness supervene I diminish it to $\frac{1}{16}$. If there be a tendency to too frequent dejections the bichloride can be guarded by an opiate. I have never had any sore mouth nor any unfavorable symptom except a slight relaxation of the bowels, which was relieved by diminishing the dose.

In connection with the internal use of bichloride, it may be used as injection; but I believe the cases of poisoning have been due to a too large dose. Dr. Ernst has pointed out that even 1:10,000 will stop the proliferation of microbes. I have used in the uterus 1:5000 and in the vagina 1:3000. As to Dr. W. L. Richardson's pad, I have used something more simple which I think equally efficacious. I have the nurse wring a napkin out of lukewarm 1:2000 solution and apply it moist; it gives great comfort.

There are certain cases of mercurial idiosyncrasy in which it is better to use injections of liquor sodæ chlorinat. or of permanganate potassæ, the latter of which I have used several times with satisfaction.

In cases in which chill or uterine colic follows intra-uterine injections, I think crayons or suppositories of iodol are excellent. Apart from its dangerously poisonous properties, iodolorm masks the lochial odor, which is a great disadvantage. Iodol, although having nearly the same per cent. of iodine, appears to be innocuous, and is excellent in suppurating surfaces.

Case 1.—Mrs. R., æt. 18, primipara, was confined by me Nov. 14, 1887, of a still-born child at term. I was obliged to use forceps on account of incompetency of uterine contractions and exhaustion of patient. There was no rupture of perineum, and but a slight unilateral laceration of cervix. She rallied well from the operation. Her lochia were very scanty from the beginning. There was no trouble with the milk secretion. She seemed to get along in a normal manner, and complained of nothing until Nov. 23, or the ninth day, when she was taken with rigor and fever. The next day I found in the morning pulse 108, temperature 103° F. Severe frontal headache, nausea and fetor of the lochia. No tympanitis nor diarrhoea, and only slight tenderness over uterus and right ovary. I ordered her 18 gr. quinine and injected into the uterus a 1:60 sol. carbolic acid by means of Jennison's reflux tube. A few minutes after the injection she had a severe rigor, which lasted half an hour. The next day the pulse was 100, temperature 103°. I now injected 1:2000 hot bichloride sol., and applied tinct. iodine over hypogastrium. A few minutes after the injection she had a bad and long rigor and became much alarmed.

The following morning her temperature had gone up to 104°, and she found it impossible to turn over on account of soreness. The injections had evidently caused shock and had not relieved her in any way; in fact she was worse. I now prescribed corrosive sublimate gr. $\frac{1}{4}$ every two hours. The next morning the temperature had fallen to 100.5° and the pulse to 92. She felt much better and less sore. I now gave her a vaginal injection of 1:2000 bichloride daily, and continued the same internally until the sixth day of the septicæmia, when she became convalescent.

Case 2 is that of a four-month abortion in which septicæmia ensued from retained placenta. I removed it, washed out the uterus with permanganate of potass., and gave bichloride internally with beneficial effect.

Case 3.—Puerperal peritonitis of a severe type, with bad sanitary surroundings in a gypsy crowded tenement. The bichloride caused a fall of temperature and was beneficial. Recovery. My cases uniformly show a diminution of temperature after its use, and generally very quickly.¹

MEDICAL PROGRESS.

CASE OF COBRA-BITE: CURE.—MR. PERCY A. RIGBY, Offg. Civil Surgeon, Sonthal Pergunnahs, reports the following interesting case:

On October 21, a Hindu, named Mohan Lal, aged about 30 years, brought a young cobra, two feet long to me, in consequence of a reward I had offered for a live cobra, for the purpose of experiment, at about 8.30 A.M. As I was not at the dispensary at the time he exhibited the snake to the Hospital Assistant, with the result that it escaped, and in recapturing it, he was bitten between the index and middle fingers, on the back of the hand. He refused any treatment and went home to take native medicines. At 12.30 P.M., the Hospital Assistant was informed that the man was in a dying state, and he at once had him brought to the dispensary.

On admission, the patient could not stand, his respiration was gasping, and he could not raise his head, but was conscious. Saliva was flowing from his mouth, and mucous râles obstructing respiration. Pulse full but soft; hand and forearm swollen; the palmar surface corresponding to the bite was livid.

The Hospital Assistant gave a hypodermic injection of permanganate of potash (5 per cent.) in the situation of the bite, rubbing permanganate powder into the wound; and a draught containing liq. ammoniæ ℥. xx. aqua oz. $\frac{1}{2}$.

1 P.M.—Patient gradually becoming worse; saliva in great quantity pouring from the mouth; mucous râles very marked; convulsive spasms of body and especially of the extremities; respiration spasmodic; head fallen forward on the chest. Pulse softer. Repeat draught of liq. ammoniæ.

2 P.M.—Symptoms increasing in severity; messenger sent off to me.

2.30 P.M.—On my arrival I found the patient as described, apparently sinking fast; the mucus threatening suffocation; violent convulsive spasms affecting the body; respiration spasmodic; pulse 60; respiration 12 and abdominal; partial paralysis of the lower limbs; unable to raise his head; mind unimpaired. I injected ℥. xv. liq. ammoniæ, aqua ℥. xv. hypodermically into the bend of the elbow. Surface of body covered with a cold clammy perspiration. A

¹ I will add to the above two cases of facial erysipelas, one being puerperal, in which the use of the bichloride, gr. one twenty-fourth, stopped the spreading of the disease in 24 hours; a thing I never saw before in any other treatment. It likewise dropped the fever like an anti-thermic.

large mustard poultice was placed over the heart.

3 P.M.—Convulsive spasms more severe; pulse more feeble; breathing very catchy; passed urine and feces in the bed, apparently fast sinking. Repeated hypodermic injection of liq. ammonia.

3.30 P.M.—Breathing had almost ceased, although the râles seemed less, and the pulse had rallied in quality, becoming firmer and being 68.

3.45 P.M.—Respiration 12, pulse 70, and improved in tone. Convulsive seizures less frequent; râles diminished and general improvement. Gave draught of ℞ xx. liq. Ammonia, swallowed with much difficulty. At this point a man of his caste came to pray over him, and before I could stop him, placed his mouth to his ear and commenced blowing into it with great violence. The patient at once had two or three violent convulsive seizures; all the improvement vanished, the pulse became almost imperceptible and respiration about 6; the jaw dropped, and he seemed *in articulo mortis*. I left him at 4.20 P.M. expecting every gasp to be his last, and instructing the Hospital Assistant to inform me of the time of his death, and directed a repetition of the draught in case he should by any chance rally.

4.20 P.M.—*In statu quo*. The Hospital Assistant gave another ammonia draught. Patient became drowsy; spasms less frequent.

4.30 P.M.—Respiration very shallow; patient seemed to become comatose; but suddenly he rallied and from this time improvement steadily continued; the pulse gradually improving, and at 6 P.M. was 78. Experienced great difficulty in swallowing, but by 8 P.M. this had passed.

The treatment now consisted simply of stimulant in the shape of oz. $\frac{1}{2}$ of country spirit every one-half hour for two doses in a like quantity of water, the next day his temperature was 101.2°, arm much swollen; saline mixture, and fomentations prescribed. There was no ulceration from the hypodermic injection of ammonia.

NOTE.—The bite was a genuine cobra-bite, the wounds of both fangs being visible, and the man was bitten in the presence of the Hospital Assistant. I regret that Dr. Richard's treatment was not more minutely carried out; but when I was called to the patient, he was so rapidly sinking that I determined on hypodermic injection of ammonia. Had not the untoward conduct of the native priest produced the desperate symptoms stated, I am confident the man would have recovered without the terrible convulsive seizures produced by this bit of fanaticism, the man explaining it was "to keep his teeth from falling out of his jaws."

As an example of what may be effected through presence of mind in the case of snake-bite, a Bombay paper gives an account of the following incident, vouching for the correctness of every detail. On Thursday evening last the *mulee* of a bungalow at Bandora was bitten on the foot by a viper, which was immediately killed by another of the servants. His master was fortunately standing by, and he at once suspected the poisonous nature of the snake. He took the most prompt measures, injecting strong ammonia (which was at hand, as the gentleman is an

amateur photographer) into the puncture, and tightly bandaging the leg in two places above the wound. Three glasses of raw whisky were also administered. By this time a horse and trap had been got ready, and the man was driven to the Bandora dispensary, where he was immediately attended to. The wound has since shown no serious effects, and the *mulee* is nearly well enough to resumé his work. The snake has been sent to Mr. Phipson, Honorary Secretary of the Bombay Natural History Society, who has written as follows: "I am sorry to say it is undoubtedly a Russell's Viper, *Daboia elegans*." The *mulee*, therefore, owes his life to the prompt measures that were taken on his behalf, and the manner in which fatal consequences were averted is worthy of being brought to public notice.—*Indian Medical Gazette*, Dec., 1887.

INTRA-TRACHEAL SPRAY.—DR. A. F. MODESTOFF has published as a graduation dissertation an account of some investigations made by him in Professor Sushchinski's laboratory in St. Petersburg on the administration of powerful drugs to dogs by means of spraying into the lungs from the trachea. The instrument used was something like a hypodermic syringe needle with a lateral orifice; this needle was connected with a small spray apparatus, the reservoir being in the form of a test tube and graduated so as to show how much of the liquid had been used. As, of course, it was difficult to prevent the animal's struggles from interfering with the operation, it was found advisable, after shaving the front of the neck, to expose the larynx and to fix it. The needle was then inserted into the trachea so that the orifice should look downwards. When water or indifferent solutions were used no effect was produced on the respiration or blood pressure which was taken in the femoral artery. When, however, solutions of active drugs—such as curare, strychnine, cocaine, and atropine—were employed, a very prompt effect was produced, frequently in about ten seconds. It was found, too, that the effect was greater as well as more prompt than when the same doses were administered by the mouth, the rectum, subcutaneous injection, or even when introduced into the venous circulation. Of course Dr. Modestoff does not propose that under ordinary circumstances this method of administering medicine should be adopted for human beings, but he thinks that it may possibly be advantageous where prompt action is of the last importance—as, for example, in some cases of poisoning, and in hæmoptysis, where other methods of treatment have failed. He quotes, also, the experience of Jousset, who, as long ago as 1874, saved the lives of two patients suffering from a very grave form of malarial fever by injecting a solution of quinine into the trachea. He also suggests that in cholera the physiological solution of chloride of sodium might be employed in this way. Again, in cases of disease of the respiratory passages where tracheotomy is indicated, he thinks that perhaps the intra-tracheal spray might sometimes serve. One observation was made on a human patient, a man on whom tracheotomy had been performed for Stœrck's blennor-

rheca. A single spraying of a fluid ounce of the physiological solution of chloride of sodium, at a temperature of 60° C. (which previous experiments had shown to give a spray of about 38.5°, or a little above the temperature of the healthy body), was sufficient to cause a quantity of inspissated crusts to be coughed up, with the result of making the patient feel very much relieved. The spray was repeated several times, causing no inconvenience or unpleasant symptom. An interesting table is given by Dr. Modestoff, showing the change of temperature caused by the formation of spray. Thus the temperature of the room being 20° C., that represented the only temperature for the liquid which underwent no change, or at which the temperature of the spray was 100 per cent. of that of the liquid in the reservoir. When the liquid was 15° C., the spray was at the first half-minute 17°, at the second 18.5°, and at the third 18.5°, the maximum percentage of the original temperature shown by the spray being 123. Of course, when the liquid was warmer than the air the process of atomization cooled it, so that a liquid of 40° C. gave a spray of 32° during the first half minute, and of 31° during the second and third half-minutes—i.e., it was cooled to 80 per cent. of the original temperature; while a liquid of 90° C. fell to 50.5°—i.e., to 57 per cent. This shows that care must be taken to ascertain the effect of the process of atomization on the temperature of the liquid before arranging the details of the operation.—*Lancet*, March 17, 1888.

COMPLICATED DISEASES OF THE PANCREAS AND THEIR SURGICAL TREATMENT.—KARL HAGENBACH records two cases, one of hæmaturia and another of carcinoma of the pancreas. The literature of diseases of the pancreas is studied at length. The number of operated cysts of the pancreas now reaches thirteen. Of fifteen cases tabulated by the author eight were males; the ages varied from 16 to 46 years. The duration of the disease is chronic, and in some of the cases the symptoms extend over a period of five to twelve years. The prominent symptoms in all cases were oppression or pain in the epigastrium, eructations, vomiting, irregularities of the bowels, and extreme emaciation. With all this there was a tense, elastic tumor in the upper abdominal region with pseudo-pulsation. Küster lays stress on the presence of a moderate amount of blood in the exploratory puncture of such tumors. This last element speaks for the presence of pancreas cysts. In Küster's case a venous hæmorrhage into the cyst probably followed the exploratory puncture.

Hæmatoma (Friedreich) of the pancreas is relatively common (hæmorrhagic cysts of Senn). The apoplectic cysts (Friedreich) (hæmatoma of Senn), are rare occurrences. The apoplectic cysts have, until now, been found only post-mortem.

Closely allied to the apoplectic cysts both clinically and genetically are the diffuse hæmorrhages into the tissues of the pancreas. The symptomatology of the hæmorrhagic pancreas cysts is in no wise a characteristic one. In one case the sudden onset of vomiting of blood caused a fatal result. In another case the appearance of blood in vomited matters and

dejecta were the only symptoms. In other cases even the above were absent, and the diagnosis was not made ante-mortem. The prognosis of hæmatoma is bad; the patient dies of hæmorrhage, or the increasing size of the tumor, or from pressure effects on adjacent viscera. The most successful treatment thus far (Thiersch and Gussenbauer) has consisted in incision, drainage or tamponade. Stenosis of the intestine in diseases of the pancreas may result from pressure of the morbid growth in rare cases. The cases result fatally, as a rule. Laparotomy fails to relieve the patient supposed at the time to be suffering from strangulation of the gut. Post-mortem alone reveals the true cause of death. This rare cause of ileus has received comment at the hands of Gerhardt (*Virchow's Archiv.*, bd. 106, h. 303). In the author's twelve tabulated cases, nine proved fatal through compression of the gut by the growth. In another case the fatal result was caused by a hæmorrhage from an ulceration of the duodenum. The diagnosis was not positively made in any recorded case before death. In all the cases where laparotomy was performed for the relief of symptoms of intestinal obstruction (3) death resulted. In cases of compression of the common gall duct by pancreas carcinoma, the author advises the formation of an artificial biliary fistula—*Deutsch. Zeitschrift f. Chir.*, bd. 27, heft 1 and 2.—*Annals of Surgery*, May, 1888.

REFRACTURE AND RESETTING OF BONES.—MR. KAILAS CHUNDER BOSE, of Amraoti, records the following case:

Pana Lal, an up-country man, æt. 22, came down from Jeypore with a badly united fracture of the neck of the left femur. When he came under my notice I thought his case was one of hopeless dislocation, rather than that of a badly united fracture. On comparing the affected leg with the sound one, I found it was shorter by several inches. On making him stand, the left knee would touch the right, and the thigh was considerably adducted. On my attempt to abduct it, I found I could only do it partially, causing great pain to the poor patient. On making him sit up on a charpoy the affected knee would keep four inches in front of the right knee. The patient had lost all control over the limb; he could not flex or extend it at will. When laid on his back, the thigh was drawn over the abdomen; there was a considerable amount of lordosis; the interspace between the spine and the bed would be four inches; he could not lie flat on his bed, would always prefer to lie on his right side. I advised his friends to take him to the hospital, as I then thought that nothing less than resection of the hip-joint would be of any good to him. I requested the favor of Dr. K. McLeod's examining the patient, to find out, if possible, a remedy other than excision. Dr. McLeod kindly examined the patient, but did not like to give any decided opinion until he had examined him a second time, and under chloroform. On the following morning the patient was placed thoroughly under the influence of chloroform. We both examined the patient. I thought that it was a case of unredressed

dislocation shamefully neglected by the local doctors, whilst Dr. McLeod declared it to be one of badly united fracture. He would advise them to bring him to the hospital, but they begged of him to do something for the patient at his own house. Dr. McLeod instructed me to hold the limb firmly, and he himself tried to disunite the badly united fracture. In our attempt to extend the limb the union gave way with a loud snap, and the shortening of the limb was at once removed, the knee was extended, and the limb placed on a long splint with a ten pound weight suspended to prevent contraction. The joy of his friends was intense; the patient, when he returned to his senses, was happy to find his leg straight. In the course of six weeks I had to remove the splint seven or eight times to change the bandage. The ends united firmly. After a month and a half he was allowed to stand up and try passive motion. He regained full control over the limb, and in ten days after the splint had been removed he was quite able to walk with a stick, and in two months he left Calcutta for his country quite happy with the result.—*The Indian Medical Gazette*, February, 1888.

METABOLISM IN TYPHOID FEVER IN CHILDHOOD.

—The urine gives perhaps the best indications of the tissue changes proceeding in typhoid fever, as in any other disease. Jacobowitsch (*Archiv für Kinderheilk.*, Bd. ix, Heft 1) has made an important contribution to our knowledge of the metabolic changes in typhoid fever in children. He insists on the necessity for knowing the actual quantity of nitrogenous material daily ingested, and also the quantity of urine and other excreta, together with the daily loss of carbonic acid and water. There is a considerable diminution in the quantity of urine passed during the pyrexial period, but no definite correspondence was noted between the elevation of temperature and the quantity of the urine. At the end of the first week there was a loss which varied from 50 to 200 cubic centimetres, and even to 500 cubic centimetres in some cases, the quantity voided being only one-half of the normal. These diminutions were rather increased during the second week, whereas at the end of the third week the quantity tended again to rise, and in some of the cases was twice the amount of the second week. During the fourth week the normal was still not reached. As a rule, the color of the urine was deeper red the less the quantity passed; but this did not always obtain, for in some instances the color was nearly natural. The reaction was usually acid—sometimes, however, only slightly. As was to be expected, the density of the urine was inversely proportional to the quantity. Gerhardt states that albuminuria results from variations in blood pressure due to the pyrexia, but Jacobowitsch does not substantiate this, for he detected no albumen in the urine in his cases at any period of the disease. The estimations of the urea discharged during the disease are very interesting, and appear to be ranged in two classes: in one the urea discharge was large during the first week, but then gradually lessened as the disease progressed; in the other class the discharge of urea gradually augmented

with the continuance of the fever, and continued to rise until the fever ended. The uric acid discharged was found to correspond with the elevation of temperature, and to be greater during the pyrexia of the first period than during the later stages of the disease. A diminished excretion of chlorides was noted all through the morbid process. The excretion of phosphates and sulphates also was grouped into two classes like the urea, in one the quantity being increased at first, but then lessening by degrees, and *vice versa*. Jacobowitsch believes that the activity of the poison in the blood has more influence in altering the urine than has the fever or the febrile accompaniments.—*Lancet*, April 21, 1888.

ANOMALOUS DUCTS OF EXIT FROM PAROTID GLANDS IN FRONT OF EAR.—DR. D. M. CROSSMAN, of Lewisdale, S. C., reports the following case:

I was called to see the children of Mr. D., a very wealthy farmer, six miles distant in the country. I examined his children (four in number), and found that three of them have a small orifice on each side and just in front of the upper portion of the external ear, and that one has only one opening in front of the left ear, and that there is a continuous discharge going on through these orifices all the time. On close investigation, I diagnosed these openings to be the mouths of small ducts leading from the parotid glands, and that, instead of the secretions being poured out through Steno's ducts at the proper place, they are discharged through these ducts externally, just in front of the external ear. Mr. D. has three children that have not this abnormality, but he has a brother-in-law (a brother to Mrs. D.), who has two children that have the like ducts discharging externally—making in all six cases, four males and two females, in the same family.

I find that whenever the excretions from the parotid glands through these ducts comes in contact with the air, in very cold weather, and when the mouths of the ducts are not kept clear and open to give free exit to the glandular secretions, the secretions accumulate in the ducts and produce glandular irritation, and when opened externally, discharge a very purulent excretion. I opened up two of the ducts, in each of two of the children, which were blocked up, and these discharged considerably. I probed two of the ducts with a small silver probe, and found that they led directly into the parotid glands.

I advised the parents to keep the ducts open to give constant and free exit to the secretions, and they have no trouble when this is done; and the discharge, when constantly going on, is so small that it is seldom noticed when kept clean.

The family record is unquestionably good through a long line of ancestry, and there is not a shade of heredity in the etiology of these cases.—*Virginia Medical Monthly*, April, 1888.

BOROFUCHSIN AS A STAIN FOR TUBERCLE BACILLI.—PROFESSOR LUBIMOFF describes, in the *Médecine des Ophthérmies*, a new stain for tubercle bacilli, which he calls borofuchsin. It consists of—fuchsin, 0.5

gram; boracic acid, 0.5 gram; absolute alcohol, 15 grams; distilled water, 20 grams. Prepared thus, it has a slightly acid reaction; it is quite clear and not liable to spoil by being kept, consequently it is always ready for use. The sputum is dried on a cover glass, and stained by being heated in contact with the borofuchsin for one or two minutes. The stain is then washed out by treatment with dilute sulphuric acid. The specimen is then washed with alcohol, and subsequently immersed for half a minute in a saturated, alcoholic solution of methylene blue. After being washed in distilled water and dried, the examination of the specimen is made in oil of cedar or in a solution of Canada balsam. In exactly the same way sections of tuberculous organs may be stained after hardening in spirit, only in such cases the steps of the operation must be somewhat more prolonged. The main difference between this and other staining processes for Koch's bacilli is that, when borofuchsin is used, the process of washing it out with sulphuric acid is an almost instantaneous one. All other bacilli are, as when other stains are used, rendered colorless and invisible, the tubercle bacilli being alone seen.—*Lancet*, April 21, 1888.

CASCARA SAGRADA.—Some interesting pharmaceutical facts on cascara sagrada are communicated by Messrs. H. F. Meier and J. Le Roy Webber to the *Pharmaceutical Journal* (No. 926). The active principles—the resins of cascara—are not bitter, and form soluble compounds with the alkalies and alkaline earths. The glucoside, though the parent or source of the bitter tonic principle, is itself devoid of bitterness. The glucoside is capable of undergoing decomposition in the normal gastric juice of the stomach, with the development of the bitter principle there. It is thus possible to prepare a comparatively tasteless product from cascara which shall contain the laxative and tonic virtues of the drug. A ferment, belonging to the class of unorganized and soluble ferments like diastase, pectase, pepsin, papayine, etc., has been discovered in cascara. The brown resin is present to a much larger extent in aged than in fresh bark, and seems to possess the greatest laxative power. The ferment seems to be identical with that existing in numerous other vegetable substances, such as cabbage, liquorice root, frangula, etc.—*Lancet*, April 14, 1888.

SCHINUS MOLLE IN BLENNORRHOAGIA.—DR. E. BERTHERAND, of Algiers, records twenty-seven cases of acute blennorrhagia, of from five to twenty days' duration, and seven old cases, of from two to eight months, in which other measures had been used without success, and in which schinus molle was used successfully. The pods of the plant, after being stripped of the epicarp, are powdered as fine as possible, and the powder mixed with a very small quantity of syrup of gum. This is a very simple way of preparing the drug, and masks its taste and odor, which are very much like that of pepper. The pills are easily taken with a swallow of water, and are easily borne by the stomach, causing no vomiting, no diarrhoea, no thirst, and no ardor urinae; on the

contrary, most patients say that the drug increases the appetite. These effects make schinus molle very much better than cubebs. Bertherand's table shows that for the acute cases the average time for cure was 11.8 days; average number of pills 26 to 27 a day, for chronic cases; average time 34.7 days. The pills were given, half in the morning and half in the evening. [Bertherand gives no indication whatever of the contents (by weight) of a pill.]—*Nouveaux Remèdes*, No 5, 1888.

BOLDIN, A NEW HYPNOTIC.—Boldin is the glucoside obtained from boldo leaves, and DR. JUNANVILLE highly praises it in a recent number of the *Progrès Médical*, as a hypnotic "far exceeding opium and chloral." This is saying a good deal for it. We are told also that boldin is not disagreeable to take, has no unpleasant effects, increases the appetite, and has a "strengthening" influence on the patient. Between 5 and 10 grams were given daily to various patients. The sleep induced by this substance is of a natural kind, and the breathing is regular and tranquil. Boldo leaves contain about 3 per cent. of boldin. It may be given in capsules in doses of 0.2 grams (3 grains), repeated as necessary, or diluted 1 in 20 in water) subcutaneously.—*British Medical Journal*, April 28, 1888.

PURPURA HÆMORRHAGICA AFTER A MENTAL SHOCK.—DR. ED DE SMET, of Brussels, has recently had a case of a young woman of a highly nervous temperament who, in consequence of a severe fright, experienced an eruption of purpura hæmorrhagica, though she had never had any eruption of the kind before. Some four months subsequently, however, in consequence of a fall, a similar eruption made its appearance. The treatment was directed mainly to the nervous system, which was evidently very much affected. Dr. de Smet refers to M. Lenoir, of Lille, who has published cases of various skin diseases—eczema, psoriasis, herpes, pemphigus, and vitiligo—which have followed a mental shock.—*Lancet*, March 17, 1888.

ERYTHROPHLEIN IN OPHTHALMOLOGY.—M. PANAS read a communication on this subject before the Académie de Médecine on March 6. His conclusions were that the drug, as a local anæsthetic for the eye, is of less value than cocaine; that its anæsthetic action is of longer duration, but the inflammation and the acute pain accompanying its application render it an improper drug for use in operations on the eyes, that if necessary, there is nothing to prevent the prolongation of cocaine anæsthesia by repeating the cocaine instillations as often as necessary.—*Bull. de l'Académie de Médecine*, No. 10, 1888.

TREATMENT OF MILK CRUST.—E. BESNIER recommends putting over the child's head a caoutchouc bonnet, which is removed twice a day to be cleansed; and over the face is placed a mask cut out of a sheet of caoutchouc. This causes the crusts to fall off, and restores the skin to its normal condition. The remainder of the treatment consists of hygienic measures.—*Nouveaux Remèdes*, No. 5, 1888.

THE

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PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MAY 19, 1888.

SPONTANEOUS AND CONTACT INFECTION IN PUERPERAL FEVER.

Much confusion has arisen in recent discussions of puerperal fever from ambiguity of terms. An illustration of this fact is furnished in the various use of the words, auto-infection and hetero-infection. It is evident, however, upon critical examination, that the difference of opinion is only apparent, not real, and is largely dependent upon the fallacy just mentioned.

Thus, Ahlfeld¹ urges that the puerperia of the cases of precipitate labor—street labors—collected by Winckel, and the labors experimentally conducted by himself to settle the question, demonstrate that self-infection does occur. Under self-infection Ahlfeld includes those cases in which “the poisoning substances were on or in the parturient passages during labor, or are formed there during labor and the puerperium, and are introduced into the body of the woman in consequence of the manipulations of physician and nurse, or without these manipulations.” This is the original conception of auto-infection by Semmelweis (“*Innerhalb der Grenzen des ergriffenen Organismus*”). It is impossible, Ahlfeld believes, to draw a sharp boundary line between infection from without and self-infection, since the *materia peccans* may be constituted by microorganisms resident in the pubic hair or in the immediate environment. He adds that the comparison of the genital tract of the recently delivered woman to a wound cut off from communication with the exterior has been productive of erroneous views. It would be better to liken the parturient canal to a contused wound of the surface

of the body. Further, that the doctrine of self-infection does not rest upon the demonstration of the presence within the vagina of pathogenous bacteria, as asserted by Stumpf. Every woman who, by reason of pelvic contraction, is unable to expel the fœtus and remains undelivered, dies of blood-poisoning or septic peritonitis, when the lethal issue is not precipitated by hæmorrhage or rupture of the uterus. Herein lies the demonstration of the presence within the vagina of every woman of microorganisms which, under certain conditions, are sufficient to cause fatal infection. A demonstration of the same fact is found in cases of sepsis consequent upon abortion, in which no hand or instrument has been introduced within the genital tract.

A few weeks since, Professor Heinrich Fritsch² made a praiseworthy attempt to clear up this confusion in terms. In this, and similar discussions, we beg to remind the reader that “names are to be valued as coins.” Fritsch calls attention to the fact that materials capable of causing infection are not found in normal blood nor in intact tissues. Solid tissues and blood removed from the healthy living organism by absolutely aseptic methods, and preserved under conditions of absolute sterility, do not decompose. Self-infection, in the sense that the agent is resident in the woman's body without gaining access from the exterior, is impossible.

Infection takes place in two modes: 1. Cocci resident within the vagina or adherent to the skin surface gain access to the puerperal wounds, cause the decomposition of the wound secretions, form ptomaines and condition a resorption fever. Infection may occur in this way with or without the intervention of physician or nurse. But is this an example of auto-infection? If it is a case of auto-infection, then an abscess in the bladder wall from catheterization, a purulent periproctitis, an alveolar abscess, an infarct in pyæmia, a peritonitis following ruptured pyosalpinx, are all examples of the same process of self-infection. Strictly speaking, all of these cases are examples of hetero-infection. In every case the agent of infection is introduced into the body of the patient from without.

II. The other mode consists in the direct infection of the wound by the hands or instruments of the attendants. It was this mode that Semmelweis had chiefly, though not exclusively, in mind when he instituted his prophylactic measures. Fritsch expresses the opinion that in these days of rigid antiseptics, the former is by far the more frequent mode of infection. This statement may be true of Germany. It is not

¹ Berichte und Arbeiten, Bd. 11 u. 111. Centralbl. f. Gyn., 1888.² Deutsche Medicinische Wochenschrift, No. 11, 1888, p. 202.

the case in the United States. We are under the conviction that the doctrine of Semmelweiss must be enunciated, and enunciated again before this second mode of infection can be excluded in the explanation of the large majority of cases of puerperal fever occurring with us.

Fritsch finds the boundary between *within* and *without* the body in any intact surface, covered with its normal epithelium. For example, whatever lies within the vagina or upon the vaginal portion, but above the epithelial covering, is outside of the body, and constitutes an infection from without.

To describe the two modes of infection, just mentioned, Fritsch years ago introduced the terms direct and indirect, primary and secondary infection. The words spontaneous and contact infection, suggested by Mikulicz and subsequently adopted by Billroth and other surgeons, are preferable.

Fritsch acting upon the principle, believed to be firmly established by modern research, that certain cocci always cause definite diseases, that there is always a definite tissue reaction upon infection with a definite coccus, now proposes the names non-pathogenous and pathogenous infection.

But there are obvious objections to the new terms, and these have not escaped the attention of their author.

It is possible in cases of non-pathogenous infection, in the absence of therapy, for death to occur, while pathogenous infection under appropriate treatment may terminate in recovery. The criteria of harmlessness in the one case and fatality in the other are thus plainly false.

Moreover, in the present state of our knowledge, it is impossible to draw a sharp line between pathogenous and non-pathogenous bacteria. There is no such thing as a puerperal fever coccus in the sense that there is a typhoid fever bacillus. Olshausen distinguishes between the coccus of sepsis and the active agent of pyæmia. According to modern views, it is in a high degree probable that various species of bacteria may stand in causal nexus with puerperal fever. It is well known that this disease has a protean character.

Upon the whole, the terms spontaneous and contact infection as now employed in surgery, answer better the requirements of a philosophical nomenclature than any of the substitutes yet proposed. Certainly these words are less productive of confusion than auto-infection and hetero-infection.

The recent discussion of self-infection has been of great practical value, since it has again directed attention to the necessity for the disinfection not only

of the fingers and instruments of the attendants, but also of the body and genital tract of the parturient woman. It has taught us to beware not only of the pathogenous bacteria clinging to the hands and instruments, but also to the bacteria, chiefly non-pathogenous, adherent to the body or clothing of the parturient woman. The discussion serves to emphasize Credé's² maxims of prophylaxis: (1) not to wound the genital tract, and (2) to preserve from infection the wounds that are unavoidable or already present.

THE CHICAGO HUMANE SOCIETY.

The Chicago Humane Society held its annual meeting on May 5. The President, MR. JOHN G. SHORTALL, announced that a new Industrial School for Boys, entirely unsectarian, had been founded, and that since last June 143 boys had been committed to this school. A total of 224 children have been rescued from the probabilities of a vicious career, and placed on the road to self-support. During the past year the Society has established two new branches in the State, at Streator and Cairo. The amount of fines imposed was \$1,837, number of complaints and cases investigated 1,625, children rescued 1,252, children sent to charitable institutions 420, prosecutions for cruelty to animals 78, prosecutions for cruelty to children 17, horses found unfit for service 68, disabled horses removed 93, teamsters and persons reprimanded 560, abandoned animals destroyed 157. In seven years the Society has rescued 6,715 children, placed 1,544 in institutions, rescued 6,342 horses from drivers, prosecuted 1,045 cases of cruelty to animals, and 314 of cruelty to children. So much for the good work of the Society.

The President referred to the charges against the *employés* of the North Chicago Street Railway for cruelty to the horses, and said none of them had developed anything demanding interference. Very naturally, since the charges of cruelty have been made against the company, not against the *employés*. The *employés* of a company are not responsible for the unfitness for service of animals used by the company. But if none of these cases demanded interference, it would be interesting to know what is the Society's standard of cruelty, and of unfitness for service. Such miserable and totally unfit horses as have been in use by the North Side company for two months past, and more, would not have been tolerated for one day had a Henry Bergh been at the head of the Chicago Humane Society. The pathological horses that may be seen, any and

² Gesunde und kranke Wöchnerinnen, Leipzig, 1886. p. 81.

every day, attached to the licensed express wagons in Chicago would, under proper and efficient administration of the Humane Society, be permanently retired from service. A painful death would be euthanasia to them, as compared with their life. At almost every hour of the day, and every day, may be seen instances of cruelty to horses at the approaches to the bridges, where already over-loaded horses are whipped to compel them to drag their loads over the viaducts. Yet in three years the writer has never seen an arrest or reprimand of a driver of such horses, nor has he ever seen an agent of the Humane Society at work.

Every day hundreds of horses may be seen driven or compelled to stand for hours with cruelly tight check-reins. Does the Society ever take cognizance of these matters? Almost as cruel is the driving of horses, when the mercury is below freezing or zero, with metallic bits, especially when the rubber bit is better at any time than a metallic one.

With all this work confronting him, the President of the Society thinks it time that some move should be made against vivisection, and attacked Pasteur in his report, though, as this "attack" is not published in the report of the meeting, it is impossible to guess how much he knows of Pasteur's work. But it is to be hoped that the Chicago Humane Society will not stultify itself by an attempt to suppress vivisection. Wholesome regulation of vivisection, in order to preclude abuse, is undoubtedly desirable, but an attempt to suppress it shows, to say the least, the presence of a biased and unequally balanced mind.

A MISREPRESENTATION CORRECTED.

Soon after the meeting of the International Medical Congress, in Washington, in September, 1887, the statement was made by a Washington paper, and subsequently copied into several other papers, and was even repeated from the pulpit, to the effect that \$6,000 of the appropriation of \$10,000 made by Congress to aid in defraying the necessary expenses of the meeting, were expended by the Local Committee of Arrangements for wines and liquors. As the terms of the congressional appropriation required the money to be expended under the direction of the Secretary of the Treasury, that high officer of government has recently transmitted to the Speaker of the House of Representatives, a full itemized bill for the amount, which will be found in this JOURNAL under head of Miscellaneous matters. If those who have been so ready to accuse the medical men of squandering the public money for strong drink, will take

the trouble to examine this bill they will see that not one dollar of the money drawn from the *National Treasury* was spent for drinks or refreshment of any kind.

THE CINCINNATI MEETING.

The Thirty-Ninth Annual Meeting of the American Medical Association, recently held in Cincinnati, was one of the most pleasant and profitable that has been held during the last decade. The arrangements made both for scientific work and social reunions, by the profession of Cincinnati, were all that could be desired. The general morning sessions were well attended, and the addresses of the President and Drs. Bartholow, Moore and Wallcott were listened to with unusual interest and profit. All of the Sections were fully occupied, and some of them held two sessions a day on account of the number and value of the papers to be read and discussed. The full official record of the proceedings will be given in THE JOURNAL next week, 26th inst., when it will be seen that the hasty and imperfect reports published by some of our contemporaries contain many and important errors. That show of enterprise which sacrifices correctness in stating the doings of important medical organizations, for a few days of time, is far from being commendable.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.

Eighteenth Annual Meeting, held in San Francisco, April 18, 19 and 20, 1888.

[Report furnished by the Sacramento Medical Times.]

(Concluded from page 597.)

THIRD DAY—FRIDAY, APRIL 20.

MORNING SESSION.

The report of the

COMMITTEE ON MEDICAL LEGISLATION,

which had been made a special order for this session, was taken up. The Chairman, DR. C. E. BLAKE, of San Francisco, presented, as the report of the committee,

A MEDICAL BILL,

which he submitted for the consideration of the Society. The bill, which discusses the subject at some length, contains several important provisions, and in its general tenor conforms to a resolution introduced by Dr. Plummer at the meeting of 1887, and which was adopted by the Society. A board of seven members, to be known as the "Board of Medical Examiners of the State of California," is to be ap-

pointed by the Governor, the conditions of appointment, official tenure and expenses being provided for. Every person intending to practice medicine in the State after the passage of this Act, must have a diploma or license from a legally chartered medical school or institution. Such school or institution being defined by the Act, and a certificate from the Board of Examiners. This certificate can only be obtained by examination of the applicant in anatomy, physiology, pathology, chemistry, toxicology, surgery and mechanical obstetrics. The fee for the certificate will be \$20, and it must be recorded in the office of the Clerk of the county in which the holder is practicing. The certificate may be refused or revoked on the ground of unprofessional conduct, which is fully defined—the applicant being cited to appear before the Board to be heard in his own defense. The Act will be printed in full in the Transactions of the Society.

DR. H. S. ORME, of Los Angeles, concurred in the bill, with the exception of section 14, relating to fines, which, as well as the penalty, he thought were too small. He believed that half of the fine should go to the informer. This would materially assist the working of the Act. In every community there are persons who are willing to do this work, and this will compensate them for the service that they rendered.

DR. H. J. CRUMPTON, of Sausalito, said that he had had some experience in the working of the medical law. He regarded this Act as a decided improvement on that at present in force. He thought that after the deliberate action of the committee, assisted by the legal member of the Society (Dr. Taylor), that it would be unwise to attempt to tinker with it. He favored placing it in the hands of the Committee on Legislation, for presentation to the Legislature, and would urge upon every member of the Society the necessity of earnest personal effort in its behalf. The people demand that pilots, who bring ships into port, shall have a license, or that a man who takes charge of a locomotive must know something about it, but they seem willing that any irresponsible confidence operator may assume the rôle of doctor.

DR. G. F. G. MORGAN, of San Francisco, said that several years ago he had attempted to enforce the medical law, but he signally failed. If there had been a provision whereby half the fine would go to the complaining witness, there would have been at least fifty witnesses in that community.

DR. ORME offered as an amendment, "That half of the fine imposed shall go to the informer, and the other half to the school fund of the State."

THE PRESIDENT suggested that the question might be put, "That it is the sense of this Society that such a change should be made, and that the matter be left in the hands of the Committee with power to act."

This was unanimously adopted.

The Committee on

RECOMMENDATIONS OF THE PRESIDENT'S ADDRESS,

through its Chairman, DR. C. E. BLAKE, of San Francisco, reported that the President be commended for his zeal and industry on behalf of the Society during the past year, and that the recommendations con-

tained in the address, particularly those relating to preventive medicine, be endorsed by the Society. The Committee presented a draft constitution and by-laws, to be acted on at the next annual meeting.

The report was adopted.

The report of the

COMMITTEE ON OBSTETRICS

was read by DR. WALTER LINDLEY, of Los Angeles. Formerly, when hæmorrhage indicated the onset of abortion, he administered small doses of ergot. He has found that a combination of ergot and morphia, in threatened abortion, had frequently prevented it. In inevitable abortion he did not believe in ergot, as it produced painful tetanic contractions. In labor he believed that it should never be given until the uterus was emptied. In normal cases he did not deem it necessary, but in cases of flooding used it hypodermically. He believed that topical measures were more important. After *post-partum* hæmorrhage is controlled ergot may be advantageously given, but it should not exclude other measures. It certainly did not hasten involution. He concluded that ergot should be used only as a hemostatic. In abortion it can be given combined with morphia, to prevent or delay. In labor it should be given only after the completion of the third stage subsequently.

DR. W. A. BRIGGS, of Sacramento, in opening the discussion, said that not more than 50 years ago a celebrated surgeon arose before the British Medical Association and exclaimed, "Thank God I know nothing of obstetrics." The retort was as keen as the exclamation; "If the gentleman is thankful for his ignorance he has much to be thankful for." He referred to this to show the position of obstetrics to-day as compared with its position 50 years ago; an advance that must be grateful to us all. Pajot, as Dr. Lindley has stated, as well as Charpentier, do not use ergot before the uterus is empty. Many of our own obstetricians do the same. One thing he regards as of extreme importance, because it confirms the conclusions naturally derived from our knowledge of the immediate action of ergot, and that is the result of the clinical studies made by Blanc and Ganzanotti, in regard to the influence of ergot in child-bed. Ganzanotti has experimented on 31 cases. He administered ergot during the lying-in period and found that instead of hastening involution ergot really hinders it. Blanc reports 82 cases. To 40 of these he administered ergot regularly for the first five days of child-bed. From 40 others of the series he withheld ergot. To 12 others he administered ergot for 10 days, and he found that in this series the uterus had attained a measurably greater involution in the 40 cases in which ergot had been withheld than in the 40 cases to which it had been administered for five days, and in these even a measurably greater involution than in the 12 cases to which ergot was given during the full ten days of the lying-in period. This is in accord with the clinical observations of such men as Pajot, Charpentier, Goodman, Reamy and numerous others whose names are perfectly familiar to us all. He was fully in accord with the principle laid down in the report of Dr. Lindley, with the pos-

sible exception of the use of ergot in abortion. It had been his habit not to administer ergot in abortion at all. The chief objection to its use in this condition is that it is so very likely to imprison the fetus within the uterus. There are other subjects within the scope of this committee which the Chairman has left to other members, one of whom he believed would present a report on Electricity in Obstetrics. There is one point which seemed to him of the utmost importance, and that is antiseptics in labor. He believed the great progress in obstetrics within the last year had been accomplished in this direction, and as one who has strenuously advocated antiseptics not only in labor, but in surgery generally, he must confess to great satisfaction in the remarks made in his Birmingham address by that arch opponent of antiseptics, Mr. Lawson Tait, who there confessed and asserted that it is the duty of every obstetrician to adopt antiseptics in labor. A very seductive term has been invented by those who, it seemed to him, want to get back into the fold without climbing the fence, and that is the word asepsis. The object of antiseptics is asepsis. If the believer in antiseptics is certain of asepsis, his object is attained. But those who talk so much about asepsis employ antiseptics for accomplishing their purpose for disinfecting, or, as they might say, "cleansing" their sponges, their hands, their instruments and even their patients. It seemed to him that this is rather quibbling, and that in obstetrics, as in surgery, we should adopt a strict antiseptics. Let us have asepsis *via* antiseptics.

San Francisco was selected for the meeting of 1890.

The report of the

COMMITTEE ON MEDICAL EDUCATION

was read by the Chairman, DR. J. P. WIDNEY, of Los Angeles. The writer believed in the *multiplication of schools*, but would rigidly fix their requirements, demanding a three years' graded course, and granting only the degree of M.B., which would not qualify for practice. A medical department connected with the State University, well endowed, and providing only for the higher education, should be provided. This would grant the degree of M.D. The result would be the establishment of one standard of education, and that a high one. He would allow any student of medicine, irrespective of his tenets, if well educated through a three years' course, to enter the higher course in the State department. This would result in a better working of the medical law by making the profession a unit.

AFTERNOON SESSION.

DR. A. M. GARDNER, of Calistoga, read a paper on *Electrolysis in Stricture of the Urethra*.

DR. W. P. GIBBONS, of Alameda, read the report of the *Committee on Indigenous Botany*. He treated of the medicinal plants peculiar to the State, and mentioned the fact that some of the modern "new remedies" had been in constant use for many years past.

DR. M. M. CHIPMAN, of San Francisco, made a supplemental report in which the long continued ser-

vices of Dr. Gibbons, both to the profession at large and to the Society, were justly recognized.

The report of the

COMMITTEE ON PRACTICAL MEDICINE AND MEDICAL LITERATURE,

was read by DR. S. O. L. POTTER, of San Francisco. He alluded to the tendency in force to confine prescribing to a single drug, and remarked that the routine prescription of former days is disappearing. He mentioned the increasing number of coal-tar products and to the possibility, as expressed by Brunton, that these artificial products might ultimately replace the organic drugs. He expressed the opinion that the germ theory of disease was at present not accepted. The two objections were, first, that in experiments it was never absolutely certain that portions of the culture fluid might not be transferred with the microbe; it was also uncertain what the exact nature of the soil on which the transportation was effected.

DR. W. F. MCNUTT, of San Francisco, in opening the discussion, said that he would allude to two points: the slow progress of the science and art of medicine, and the part that microorganisms play in disease. The reason why the science and art of medicine has progressed so slowly, is probably not the fact that we run from one new medicine to another, as Dr. Potter would make us believe, but that we have been trying to develop a science by merely developing the art, or the practical part of it. There is a science and art of medicine, and the application of therapeutics is largely an art. The great future for our science is preventive medicine, and the road along which the science of medicine must be developed is pathology. The key-note to preventive medicine and the study of pathology, is etiology, and etiology is a new science. Etiology has been studied but a few years. In our student days we heard nothing of etiology, yet we can say that it is absolutely impossible to understand or develop the science of medicine or to understand pathology without etiology. Etiology, then, is the key of the scientific part of medicine. No matter what we may believe about microorganisms, etiology cannot be advanced without taking them into consideration. There is a fact in it that must be admitted or disproved, while the methods of investigation may, and ought to be, questioned, while much of it cannot be substantiated, yet, step by step, it is making way. For instance, the doctor mentioned actinomycosis. What could the pathologist do for that without understanding its etiology? We find a few abscesses, perhaps, about the angle of the jaw, and we talk of blood poisoning, but the microscope shows us the microorganism—the spreading fungi and the actinomycetes—and then we understand the pathology of that disease. Take what we used to call endemic hematuria—How much did pathology and therapeutics do to explain it until the etiology of the disease was discovered. When we found that the parasites that produced it were confined to places in Egypt, Mauritius, Cape of Good Hope and other places, then we understood the pathology and the treatment of this affection. Take uræmic poison—What did pathologists do to explain it until we

understood that uræmic poisoning did not depend upon urea in the blood or upon ammonia, but upon the fact that the epithelial lining of the uriferous tubules failed to secrete urea from the excretions that were producing the symptoms? Then we understood the etiology and the whole thing was perfectly plain. The path along which pathology must be developed and scientific medicine must be advanced, will depend upon our progress in the study of etiology.

DR. J. H. STALLARD, of San Francisco: As the question before the meeting seems to turn somewhat on the advancement of medicine, I probably may be permitted, as one of the oldest members of the profession present, to take exception to the position of the Chairman of the Committee, and also to that of the gentleman who has opened the discussion. When I look back, I am sorry to say, very nearly fifty years, since I was a student, it seems to me that in no profession, and in no department of science has a greater progress been made than in the art and science of the profession to which we belong. I remember perfectly well seeing one of the most distinguished physicians in my native city under the delusion that he was suffering from congestion of the brain, the result of long and arduous work, with twenty-four leeches around his head, and a considerable number of empty bottles, the contents of which he had consumed himself. I have seen the time that that gentleman thought it his duty to prescribe a quart bottle of medicine for a child 4 years old; and when no physician visited a patient, whether two or three times a day, without writing a fresh prescription, and, I say, that in this particular, and in many others, there has been a vast progress. It is forty-five years ago since I was the first practitioner in my native town to discard the principle of being paid by the amount of physic that I poured into a patient's throat; but it was the most unfortunate piece of business I ever did in my life, for I destroyed my practice for a considerable length of time. People only desired to pay for what they swallowed, and physicians would prescribe four doses of medicine a day, two to be taken at night time, with an embrocation, a lotion and a blister. But all that has now passed away. In my opinion, there is a great advancement in the art of medicine, and I do not think we have anything to be ashamed of in the progress we have made in the last forty or fifty years.

DR. A. ABRAMS, of San Francisco, believed that Dr. McNutt had slightly exaggerated the benefits derived by practical therapeutics from our advanced knowledge of the etiology and pathology of diseases. Uræmia having been mentioned, he would take this as an example. The etiology of uræmic intoxication can, for all practical purposes, be explained by the ingenious mechanical theory of Traube, or the more ingenious theory of Frerichs. The chemical theory of Frerichs supposes that the retained urea in itself does not produce uræmia, but only by its further conversion, by means of a ferment, into carbonate of ammonia. There is much clinical evidence in support of this theory, and it is accepted by most authors as correct. According to this theory, the administration of acids would at once neutralize the ammoniacal condition of the blood and cure the disease. How

successful we have been with the acid treatment needs no comment. To get rid of the retained products of tissue metamorphosis by the compensatory emunctories constituted the old treatment, and it would seem to be but little modified by the recent developments of pathology. Because we know that the epithelium lining, the uriferous tubules does not properly secrete, is but little aid to our inefficacious therapy. Bacteriology has held out more seductive inducements to therapy than any other development of medicine, and it is a sad commentary on medical science to find how disappointed we have been. Although we cannot deny the benefits afforded by antiseptic medicine, the good achieved belongs rather to prophylactic than to curative medicine. The course or duration of the infectious diseases, where pathogenic microbes have been recognized as etiological factors, have been but slightly modified by a practical therapy founded on bacteriological investigations. Our more recent knowledge of bacteriology relegates the microbes to a secondary place, attributing the pathogenesis to the development of ptomaines. To oppose the virulent action of these ptomaines constitutes, then, the future basis for rational therapy. The speaker suggested the use of the term *ptomainemia* to designate that condition following the absorption of the ptomaines.

On motion, the Society decided to subscribe for one copy of the *Index Medicus*, to be placed in the hands of the Secretary.

DR. C. CUSHING, of San Francisco, read the report of the *Committee on Gynecology*, on the subject of the Condition of the Abdominal Organs Requiring Abdominal Section. This must sometimes be done for purposes of accurate diagnosis. Cases of extra-uterine pregnancy required operation. This was frequently diagnosed at an early date. He reported a case of suppurating pelvic hematocoele which was not cured by drainage through the vagina, and required section. Section should be performed in these cases, as it ensured thorough cleansing and perfect drainage. A prolapsed, fixed and tender ovary should, under certain circumstances, be removed. He ascribed many of the attacks following examinations by sound or other means to the expulsion of some of the secretions from the diseased tubes into the peritoneal cavity. He believed that these cases required operation. In uterine fibroids where hæmorrhage was serious, or if the tumor was large, operation was demanded. He believed that with due precaution any intelligent practitioner was justified in an emergency in performing these operations.

EVENING SESSION.

Committee on Graduating Exercises.—Dr. O. O. BURGESS, of San Francisco, reported that forty-four students had been graduated from the two colleges in San Francisco. A thorough examination of the papers had been made, and he was satisfied that the diplomas were fairly earned. The standard appeared to be fully equal to that of any other medical college, and the only point to which he would particularly

call attention, was the necessity for more thorough preliminary education. It was also recommended that in future one member of the committee be resident in Los Angeles, so that the medical college of that city might also be examined. The Society, by resolution, endorsed the recommendation.

A Medico-Legal Board.—The proposed amendment relating to the establishment of a Medico-Legal Board was brought up for discussion, and on motion was referred to the special committee on Constitution and By-laws. Several members objected to the amendment on the ground that it involved the Society, hampered the Board of Examiners, and had proved a failure in other countries.

INSTALLATION OF OFFICERS.

The business of the session being concluded, the retiring President, DR. R. H. PLUMMER, addressed the Society. He alluded to the responsibility and the labor which the presiding officer necessarily assumed. To him it had been a source of anxiety, but also of pleasure. Two years ago the Society numbered but 200 members; at the close of this meeting it included 450. The contributions had been numerous and creditable. Three years ago the annual meeting lasted for two days only, and the evening of the second day was devoted to a banquet. On this occasion it was found that three days were not sufficient, and the question of a four days' session would have to be considered. He alluded to the number of visitors from the southern section of the State, and to the number of applications for membership which had been received from that locality, and expressed the opinion that the meeting of 1890 would be held in Southern California. He thanked the members for their hearty coöperation during the year and at the meeting. In introducing the President-elect he alluded to his faithful services in the cause of the society, and to his conscientious and thorough discharge of the duties that had been assigned him.

DR. JAMES SIMPSON, the President-elect, in thanking the Society for the honor which it had conferred upon him, said that he fully realized its responsibilities. He alluded to the reorganization of the Society in 1870, when it seemed more than doubtful that it would ever attain its present proportions. He said that the officers elected were expected to sacrifice their time to the Society, and that they must give it all the attention that it demanded. He concurred in the opinion of Dr. Plummer, that the meeting of 1890 would be held in the South. The State was a large one, and members must expect to travel considerable distances. In conclusion, he promised to use every effort on behalf of the Society, and to do good and faithful work.

New Members.—At the different sessions the following were duly elected members of the Society:

Adams, George	Mack, W. E.
Alford, F. A.	McGonagle, Beverley
Anderson, A.	Maynard, H. H.
Bailey, J. E.	McDougall, W. D.
Barber, D. C.	Melton, Lewis
Bicknell, F. D.	Merritt, Emma S.
Booth, Jas. P.	Merritt, Geo. W.

Borde, H. J.	Miller, J. H.
Boyce, J. F.	Murphy, W. W.
Brainard, H. G.	North, Thos.
Brummet, S. B.	Northup, D. B.
Carpenter, Lewis	Otto, G. W.
Cook, Wm. Harris	Patterson, E. M.
Crepin, E. A.	Pearson, J. F.
Darling, A. F.	Pond, R. B.
Davis, T. A.	Posey, A. C.
Dodge, Wm.	Reading, J. W.
DuBois, H. A.	Rogers, A. C.
Foot, Gilbert	Sentfelen, Hugo
Forrest, John M.	Sietkes, John L.
Hart, A. J.	Smith, E. R.
Haynes, F. L.	Snider, J. R.
Hoghead, A.	Shearer, M. M.
Holland, L. T.	Stockton, Thos. C.
Johnson, Chas. M.	Szigerthy, A. C. H. de
Jones, Caleb V.	Taylor, Albert M.
Knox, S. P. P.	Todd, J. C. R.
Kurtz, James	Thomas, George P.
Larkin, John	Trembley, F. N.
Lasher, Geo. W.	Valle, Charles C.
Leonard, J. T.	Wharry, Charles J.

THE EXHIBITION.

A spacious room, adjoining the large assembly hall, was well filled by the various firms who were anxious to attract the attention of the Society. This feature was a great success—in fact it proved so attractive that on several occasions during the meeting committees were appointed to bring in the members who were sampling the junket and cocoa and stocking their pockets with pills and powder, baby food and concentrated nutriment for all ages.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, April 5, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

(Continued from page 530.)

DR. PARISH presented the

SPECIMEN OF A STRANGULATED OVARIAN CYST.

The patient was not aware that anything ailed her until one night she was seized with intense abdominal pain and, jumping out of bed, rushed about the house screaming with the suffering. Dr. J. H. Musser was sent for and gave her a hypodermic injection of morphia. The dose had to be repeated frequently, and in two days the pain began to subside, it being altogether gone in five days. The temperature remained nearly normal until the fourth day, when it was found to be 103°, and was the same on the next day, the day of operation. A notable fact is that the temperature and pulse both rose steadily while the pain was steadily decreased after the third day. I saw her on the fourth day, and agreed with Dr. Musser that we had an ovarian tumor with a twisted pedicle to deal with. Because of the absence of the husband the operation was not performed until the next day, January 17, 1888. The tumor was found to spring from the left ovary and was very black, in this respect differing entirely from an ordinary ovarian cyst. The contents were those of an ordinary cyst with coagu-

lated blood in addition. The pedicle was twisted three times and was quite soft and black. After emptying the tumor he untwisted the pedicle and transfixed it below the point of twist, and the tumor was removed. The recovery was very rapid, the temperature going down steadily. The drainage-tube was removed on the second day. The patient is now entirely well.

Twisting of the pedicle is a well recognized accident to ovarian tumors, but the cases do not all present such marked changes as this case did. The specimen as it lay on the plate presented a marked contrast to the cyst lying beside it, and which had been removed a few days before from the broad ligament.

In connection with this case he would report one operated on three months ago. The woman had complained of sudden intense pain in the pelvis and was confined to her bed from that moment; she had remained in bed for over two months with general peritonitis. A number of physicians had attended her, and one of them had introduced an exploring needle into the abdomen. She was extremely exhausted and had a constant temperature of 103° or higher. An incision was made above Poupart's ligament, and opened into a tumor. It was found to contain pus and coagulated blood. Its cavity was cleansed out and the incision closed around a drainage-tube. The cyst walls were very thick. It was a blood cyst, but it could not be determined at the time with certainty whether it was intra- or extraperitoneal, but it was believed to be intraperitoneal. In three days strangulation of the bowels developed with fecal vomiting. The bowels could not be gotten open, and a second operation was proposed on the next day, but was refused by the friends. On the day after, however, a second incision was made from a point under the spleen towards the old incision above Poupart's ligament. There was a distension of the abdominal walls in the lumbar and hypochondriac regions. Great pain under the spleen had developed. The intestines were found adherent in a mass, and three large bands were found to extend from the region of the spleen to the right inguinal region. The adhesions were broken up and these bands were ligated and cut off. No irrigation was used. The whole wound was closed, and a large piece of adhesive plaster was placed over it to protect it from the discharges from the lower and first incision. Convalescence was slow, but had finally terminated satisfactorily.

DR. BARTON HIRST reported

TWO CASES OF HYDRAMNIOS.

The etiology of hydramnios is so obscure that, according to Bar, 44 per cent. of all cases admit of no explanation. Every case, therefore, that can be traced to a distinct cause must possess some degree of interest.

Case 1.—A young primipara was brought to the maternity pavilion of the Philadelphia Hospital in the first stage of labor. External examination showed an enormously distended abdomen of a globular shape, giving distinct fluctuation. Internally the os was about

the size of a dollar. An amniotic sac, very tense, filled up the greater part of the pelvis; to one side and above this could be felt a small fetal head, evidently macerated, covered by its membranes with no intervening liquor amnii. The diagnosis was plain: twin pregnancy; hydramnios of one amniotic sac, which was acting as an obstruction to labor by preventing the descent of the fetus contained in the normal sac. The distended sac was ruptured. The edges of the rubber sheet upon which the woman lay were gathered up and all of the escaping fluid was caught. It measured 5 quarts. The macerated fetus was then expelled and a living one followed soon after. The latter corresponded in development to about the eighth month of pregnancy; the former had apparently died at an earlier period of intra-uterine life. The woman said that until within five weeks she had noticed nothing unusual in her condition, but that since that time the abdomen had rapidly increased in size; without, however, causing her much inconvenience. To explain this case of hydramnios Werth's theory must, I think, be called upon. According to this observer, an hypertrophied placenta, in absorbing more fluid from the maternal blood than the fetal economy can dispose of, brings about hypertrophy of the fetal heart and kidneys and a consequent polyuria. And, in addition to this, the increased pressure within the umbilical vein favors a transudation of fluid through the amniotic covering of the placenta. In the case under consideration the placenta was quite double the size of a normal single one, with extensive anastomoses between the two sets of fetal vessels. One fetus having died, the other was suddenly called upon to deal with the very large quantity of fluid abstracted from the maternal blood by an enormous placental surface—an impossible task, so that the excess of liquid had to be gotten rid of by excretion and transudation into the amniotic sac.

Case 2.—*Hydramnios in a multipara, with serious heart disease. Mitral regurgitation and aortic stenosis. The quantity of liquor amnii was estimated to be 4 quarts.*

If one accept Tarnier's idea all cases of hydramnios may be divided etiologically into two broad classes, depending either upon over-production of liquor amnii or upon insufficient absorption of the amniotic fluid. In the latter division it would seem that one should put this case. The veins were choked with blood, the circulation was sluggish to a degree, and if it is true, as it seems to be to my mind, that some of the liquor amnii is absorbed by the maternal vessels, the absorption here was reduced to a minimum.

DR. HIRST also presented the following report:

I was recently called by a medical student to see a woman with an adherent placenta and post-partum hemorrhage. I found the patient almost exsanguine and the fetus dead. The woman's friends declared that the baby had been born while the woman was on her feet, had dropped upon the floor and had been killed by the fall; they further asserted that the afterbirth had not come away. A vaginal examination showed no trace of cord or placenta; the hand,

however, passed into the uterus, discovered the placenta glued fast to the uterine wall and so tightly adherent that considerable force was necessary to detach it. The cord had been torn away from the fetal surface of the placenta, leaving a spot about the size of a dollar bare of amnion. The large branches of umbilical vein were torn across.

DR. J. PRICE made a

COMPARATIVE REPORT OF HOSPITAL AND OUT-DOOR OBSTETRICAL CASES.

I do not wish to discuss at length the old question of home vs. hospital practice in obstetrics. The whole matter has been fully discussed and some excellent books published on the subject. Maternity hospitals must exist for destitute women when they need both shelter and assistance. To compare the results in out-door practice where patients reside in unsuitable and unsanitary locations with the results of a well organized maternity hospital is impracticable without an immense amount of labor and statistics.

We all struggle to secure the prevention of deaths during childbirth. The diminution of maternal mortality is the chief object of our obstetrical art.

In an established maternity hospital we find difficult and complicated cases, a constant quality in a class of patients particularly prone to accidents incident to parturition. This class of cases, particularly among the poor, cannot receive the attention of trained attendants at their homes, and hence are admitted to hospitals because skill can do more there in averting danger and death. There are many cases which foil the most consummate skill. Again, there are simple complications which defeat the inexperienced physician and the midwife.

In the "Retreat" I aim at the highest degree of surgical cleanliness. Distance dirt and all goes well. All effete matter and refuse is removed at once from the building. The air in the wards is kept in motion. Every attention to matters of detail, especially to kindly and cleanly nursing, is insisted on. I have never been able to understand why the results of out-door practice among the poor, who have inadequate means of procuring the necessary comforts of life even in health, and who have made no provision for themselves for childbirth, should be perceptibly better than the results in hospital practice. I am aware that the statistics of out-door lying-in patients have been pronounced wholly worthless and unreliable. In order to satisfy my own mind in regard to this question I have made careful analysis of the cases coming under my own practice during a period of almost three years.

The rule in regard to dispensary cases has been attendance by graduates or students of medicine during confinement and recovery, for at least ten days and in the same manner as in private cases, all complications requiring the presence of myself or some one with experience. This rule has been carefully enforced. All accidents in cases of difficult labor have been due to delay in asking for assistance. Delay is dangerous, promptitude is everything.

HOSPITAL PRACTICE, PRESTON RETREAT.

Number of confinements, 101; vertex presenta-

tions, 98; breech presentations, 2; missed labors, 1; induced labors, 2; contracted pelvis, 2; syphilitic mothers, 3; syphilitic children, 3; children dropped in gutter, 1; placenta prævia, 2; lacerated perineums (closed) 6; forceps delivery, 9; version, 2. Multipara, 74. Primipara, 27. Previous miscarriages: 1 had 19; 2 had 4; 3 had 3; 5 had 1. No deaths. Boys, 54; girls, 48; twin labor, 1. Still-born males, 2; still-born females, 2. Hare-lip, 1. Cleft palate, 1.

PHILADELPHIA DISPENSARY, OUT-DOOR DEPARTMENT.

Confinements attended, 758. Vertex presentations, 738; breech presentations, 9; foot presentations, 6; shoulder presentations, 3; face presentations, 1; transverse presentations, 1. Complex labors, 1; induced labors, 2; twin labors, 3; forceps deliveries, 24; version deliveries, 4. Adherent placenta, 9; retained placenta, 2. Rachitic pelvis, 2 (one craniotomy and one forceps delivery, death). Contracted pelvis, 3. Large head, 2. Double inguinal hernia, mother, 1. Dropsy of amnion, 1. Uterine fibroids, 1. Prolapsed cords, 3. Placenta prævia, 4. Atresia of cervix, 1.

ACCIDENTS OF LABOR.

Lacerated perineum and cervix, not closed, 10; closed, 19. Delivered at stool, 1; delivered on floor, 1; premature labor, 7.

MOTHERS.

Pregnancy.—Primiparous, 191; second, 136; third, 99; fourth, 61; fifth, 65; sixth, 45; seventh, 37; eighth, 30; ninth, 28; tenth, 21; eleventh, 5; twelfth, 7; thirteenth, 3; fourteenth, 2; fifteenth, 1; sixteenth, 1; seventeenth, 1; eighteenth, 1.

PREVIOUS MISCARRIAGES.

One miscarriage, 104; 2 miscarriages, 48; 3 miscarriages, 14; 4 miscarriages, 9; 5 miscarriages, 5; 6 miscarriages, 3; 7 miscarriages, 1; 9 miscarriages, 1.

Deaths.—Septicæmia, 2; pneumonia, 1; died undelivered, 3; placenta prævia, great hæmorrhage, tampon, 1. Mortality, .005 per cent.

CHILDREN.

Males, 395; females, 334. Still-born males, 22; still-born females, 13.

Died during attendance: Apoplexy of the cord, 1; hæmorrhage of bowels, 1; debility, 3.

These patients were all attended at their own homes.

DR. HIRST said that the speaker was to be congratulated on the low mortality of the out-door cases. He had himself some months ago collected statistics of the American hospitals and of general obstetrical practice, and had been convinced from this and other investigations that the mortality of parturient women

¹ One child was dropped in the gutter as the mother alighted from a carriage to enter the hospital. No injury to child or mother. As there had been no antiseptic preliminary treatment, the case was carefully watched. No symptoms of septic trouble set in. Patient was absolutely comfortable during convalescence. Neither doctor nor nurse were responsible for the accident.

² Membranes parted; no hæmorrhage when head engaged. Patient exhausted by loss of blood and extreme heat of day, and was assisted by forceps.

³ Placenta prævia centralis. Version and delivery twenty minutes after admission. Hand not withdrawn after introduction for examination. Hæmorrhage great; patient exhausted.

⁴ Dead probably one month before delivery, due to fall in cellar.

⁵ Foot protruding from vagina when admitted. Forceps. Child living.

in the latter class was about 1 per cent. Of some 10,000 cases collected in England the mortality had been .95 of 1 per cent.

DR. LONGAKER thought that, in consideration of the small number of times the forceps had been used, the fetal mortality of the out-door cases was not surprising. Had the forceps been used more frequently the death-rate would have been less. Not more than about one child out of fifty should be born dead.

DR. WM. GOODELL read a report of his

CASES OF LAPAROTOMY DURING THE YEAR 1887.

He had 53 of them, as follows:

Ovariectomy—27 cases, 22 recoveries, 5 deaths.

Oophorectomy—19 cases, 18 recoveries, 1 death.

Hysterectomy—1 case, 1 recovery.

Malignant tumor of omentum—1 case, 1 death.

Pelvic abscess—2 cases, 2 recoveries.

Exploratory incision—3 cases, 3 recoveries. Total—53 cases, 46 recoveries, 7 deaths.

He showed a table giving the name of the medical attendant of each case, and the place and time of the operation.

With regard to the fatal cases: the first one was a case of malignant papillary cyst of both ovaries, by which every abdominal organ seemed to be infected. Bleeding intestinal adhesions needed several ligatures and the application of Monsel's solution. Unsurmountable obstruction of the bowel took place and the woman died on the seventh day.

The second fatal case was in a short but exceedingly fat woman, weighing 254 lbs., who could not walk without assistance. The area of raw surface made by the deep and long abdominal wound was the most extensive Dr. Goodell had seen. Both ovaries being diseased, were removed; they had contracted adhesions to the abdominal wall, and the larger weighed only about twenty pounds. The lady was operated on at her own home in the country and was not again seen by Dr. Goodell. She died on the fourth day from peritonitis.

The third case was a forlorn hope. At the time of the operation she had septicæmia, she was delirious and very ill indeed, and suffered great pain. By her shrieks she disturbed one whole floor of the University Hospital, although she was on that account confined in a remote room. The cyst was intra-ligamentary and was adherent to the abdominal wall, the intestines, the stomach, the aorta, the womb, and to the whole pelvic basin. All the adhesions but the pelvic ones were severed; but the latter were not touched, as the woman seemed to be dying, and it was apparent that she could not survive the shock of a completed operation. Many stimulating hypodermic injections were given during and after the operation, but she never rallied and died seven hours later. The fourth was a bed-ridden and very emaciated woman, in whom the cyst had burst several weeks before, and she was being slowly poisoned by the absorption of the colloid matter. The cyst had universal adhesions and every abdominal organ seemed infected. The peritoneal cavity was flushed and drained. The patient died on the eighth day from sheer exhaustion. The fifth death

took place in a case of putrid and rotten dermoid cyst. The woman was also bed-ridden from septicæmia. During the operation, while very firm adhesions were being severed, the cyst wall was torn and a very small quantity of the offensive fluid escaped into the abdominal cavity. This was flushed and drained, but the lady died on the fifth day from septicæmia.

Of the nineteen oophorectomies there were an unusual number of difficult cases, both on account of adhesions and of the size of the fibroid tumors, for which the ovaries were removed. In the sole fatal case death was due to uræmia from suppression of the urine, unsuspected kidney mischief probably having previously existed.

Of the seven remaining laparotomies, one resulted in death on the forty-eighth day. It was a case of malignant solid tumor of the omentum, causing ascitis and excessive pain, from which the patient had been confined to her bed for many weeks. The great vascularity of the parts and the very extensive adhesions to the bowels made the operation a difficult one. For two weeks the patient did well, then large abscesses burst out of the wounds and into the intestines, and the drain destroyed her life on the forty-eighth day after the operation.

In the two cases of pelvic abscess the sac was sewed to the lips of the abdominal wound and a drainage-tube put in. In the case of hysterectomy, a two pound subperitoneal fibroid of the wound was removed, on account of pain and vesical irritation caused by it. The three exploratory incisions were made respectively for sarcoma of the womb and ovaries; for malignant disease of the intestines; and for a fibroid of the womb. In the last one it was the intention to remove the ovaries, but on account of very firm and deeply seated adhesions, those organs could not be reached. In the other two cases of the exploratory incisions, malignancy was suspected, but the operation was performed to make out a positive diagnosis.

Among the twenty-seven ovariectomies there was a larger number of difficult cases than usual; nor had he refused to operate in any case offered him. In sixteen both ovaries were removed. Twenty-three had adhesions, and drainage was resorted to twelve times. In three the adhesions were universal; in six firm intestinal adhesions existed; while in three the cysts were intra-ligamentary, presenting very formidable obstacles to their removal. In one of these last cases the result was successful, although the wound had to be reopened four hours later to stop a deeply seated hemorrhage, and although a fecal fistula was established by injury to the rectum.

DR. KELLY remarked that he had been especially pleased with the careful consideration given by Dr. Goodell to certain points in the handling of abdominal cases, which were too often looked upon as a minor matter in the treatment, but are after all the essentials of success. One of the most important of all matters is the checking the hemorrhage from adhesions to intestines, etc. A satisfactory way of checking hemorrhage from smaller areas on the abdominal wall is by passing a needle under the peri-

toneum and carrying several threads across the bleeding area, and upon tying these threads, bring raw surface to raw surface. He had seen Dr. Zweifel, of Leipsic, invert a *large* bleeding area on the abdominal wall, and transfixing skin, muscles and peritoneum from without fasten a number of sutures to ivory rods on either side of the skin-flap thus formed. He had frequently used the cautery, in times past, but not recently. In a recent case of severe general hemorrhage from the base of the whole broad ligament after removing a distended Fallopian tube, he had checked the bleeding by a series of ligatures enclosing the whole broad ligament from its pelvic attachment to the uterus, introduced entirely beneath the raw surface.

A practical point of the utmost importance upon which he would insist is that when the bleeding is checked all the danger is not obviated, whenever there has been much stripping of peritoneal adhesion; in spite of the fact that the bleeding may have been checked, a lymph flow sometimes profuse is often poured into the abdomen, and if it is not carried off at once by the peritoneum it forms an excellent culture field for the few bacteria which are almost sure to enter at any operation. The drainage tube meets this danger.

He has had a good many cases of rectal fistula which have been very troublesome, but the tendency here seems to be to heal. The peculiar liability of pus cases to this accident is readily accounted for by the tendency of the ulcers to form rectal adhesions and ulcerating through, to evacuate itself. In many cases the wall between the abscess and rectum must be very thin. The best after-treatment in abdominal cases is to put them in the hands of a trained nurse, and leave much to her judgment.

Dr. GOODELL liked to give credit to his fellow-countrymen whenever he could, and if he was not mistaken the credit of first doubling peritoneum on itself and maintaining bleeding surfaces in contact by pins or quill sutures, was due to Dr. Kimball, of Lowell, Mass. Several years ago Dr. Goodell had resorted to this plan, but not since he had used Monsel's solution or the thermo-cautery.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, April 25, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR GEORGE McCLELLAN reported a case of

AMPUTATION OF THE LEFT HALF OF THE TONGUE FOR EPITHELIOMA.

Michael G., an Irishman, aged 40, was admitted the first of this month to my ward at the Philadelphia Hospital. He stated that he had never had syphilis, and that his general health had always been good—which was borne out by his appearance. He had always been an intemperate smoker of a short-stemmed pipe. Six months ago he first experienced

sharp and shooting pain extending from the root of the tongue on the left side down the neck and over the face. A small sore was noticed on the side of the tongue about its middle, which rapidly increased until, at the time of admission to the hospital, it was the size of a half dollar. Articulation and deglutition were interfered with, and there was a constant flow of saliva. There was also, apparently, an enlarged gland in the submaxillary triangle. I diagnosed the disease to be epithelioma, and undertook its removal by amputation on April 11, just two weeks ago. An incision was made from the symphysis of the chin, a finger's breadth below the jaw as far as the external jugular vein; the deep cervical fascia was torn through with the fingers and knife handle, and the swelling, which was under the sternomastoid muscle, proved to be a degenerated gland, or rather cyst, which was filled with thick, cheesy matter. The cyst was evacuated of its contents, the cyst wall torn out as much as possible, and the lingual artery, which was exposed in its relation to the hyoid bone, the hypo-glossal nerve, and digastric muscle, was secured by a ligature. The anterior belly of the digastric was severed, and the mylohyoid muscle with the oral mucous membrane punched through with the finger, and the tongue having been freed from its frenum and pierced at its apex with a strong needle and string, was pulled down into the wound in the neck, as I hoped by so doing to be able to take away the diseased portion by the first incision. This proved inadvisable, owing to the short, thick neck of the patient, and would have endangered the carotid and deep vein, and I at once cut through the commissure of the mouth, and, after trying the coronary arteries, pulled the tongue forward, passed a trocar and canula through the middle of its base close to the hyoid bone, the trocar was withdrawn, and the chain of an *écraseur* was passed through the canula, and, after withdrawing the latter, I found the *écraseur* worked admirably. I then cut off the affected half of the tongue close to the *raphé*, and was able to show my assistants that the only bleeding vessels from the tongue itself were at its apex. A ligature secured these, and the stump was lightly touched with the Paquelin cautery. Both wounds were then united by interrupted silk sutures and dressed antiseptically. There was a rise of temperature to 103° the evening following, which was reduced by quinine suppositories and sponging. Since then it has been about normal. There was a great deal of venous bleeding during the operation, but very little arterial, owing to the early and prompt securing of the lingual and branches of the facial. Cracked ice and iced milk only were allowed the patient for the first twenty-four hours. The wounds were found healed at the first dressing on the third day, and this morning, (April 25), I saw the patient sitting up in a chair, dressed and wishing to go out. He has had no pain whatever, and talks perfectly, and takes nourishment better than for a long time before the operation.

DR. G. G. DAVIS: I would like to ask Dr. McClellan where he tied the lingual artery. It is usually taught that the proper place to expose this ves-

sel is in the digastric triangle. My own experience, in teaching the operation upon the cadaver, is that it may often be more readily found and ligated behind the digastric, thus obviating the necessity of cutting through the mylohyoid muscle. In the hip-joint excision it would be interesting to know how far down the shaft of the bone was removed. If a preliminary resection of the joint and shaft low down is practiced, and afterward an amputation through the thigh performed, I believe that the operation will be of much less gravity than if the whole operative procedure is undertaken at one time. Of course, this refers only to cases in which the condition of the patient is such as to make a primary hip-joint amputation too dangerous.

DR. McCLELLAN: The lingual artery is not difficult to secure. The land-mark is the great cornu of the hyoid bone, and by making a curved incision parallel to the angle of the lower jaw, over it, we can readily expose the looped tendon of the digastric muscle and the stylo-hyoidus. Here the hypoglossal nerve is found, and the lingual artery passes immediately behind it.

It will be remembered that there was a great mass in the neck, probably due to secondary involvement from the growth on the tongue. The first incision was made with the view of removing the gland and bringing out the tongue laterally by the same means of access. The gland was found beneath the sternomastoid muscle, and a dissection to expose it would have endangered not alone the carotid, but the deep jugular, which I am loath either to wound or to tie. I therefore tore out the cyst after discharging its contents, and then brought into view the parts over the lingual.

In looking over the history of excision of the tongue, I have been struck with the fact that the different methods adopted all have points worthy of consideration in different cases. The operation of cutting through the symphysis is sometimes practiced, also the horseshoe sub-mental incision. The lateral operation is applicable only in a long, thin neck. It could not be performed in a short thick neck. The other operation of simply cutting through the oral commissure is very easy and simple, and exposes the parts sufficiently in all cases where the disease is situated behind the middle of the organ. If we simply remember that the deep cervical fascia which loops down the two bellies of the digastric muscle also covers the artery and nerve, we need have no difficulty in finding the lingual, and it is readily distinguished from the nerve which lies in front of it, both upon the cadaver and living patient. The difficulties sometimes experienced in operating on the former are due to the relation of the parts not being properly remembered.

DR. GEORGE McCLELLAN reported a case of

EXCISION AT THE HIP, FOLLOWED BY AMPUTATION.

Riocco V., the Italian, whose limb I amputated after having previously excised the hip, presents some points of unusual interest. He came to this country at the age of 18, and while on shipboard had a fall, to which he attributed the trouble in his hip.

He worked for six years at his trade as stone-cutter, and was finally admitted to the Philadelphia Hospital two years ago, with symptoms of hip-joint disease, and a right basal pneumonia. After recovering from the latter, an incision was made over the great trochanter, and pus evacuated, but excision was not done, owing to his generally bad condition. When I went on duty at the hospital, March, 1887, I found the patient with a temperature of 104° , and profuse suppuration. I at once excised the head of the femur below the trochanters, and scraped the acetabulum, which was carious. Instant relief followed, as is evidenced by the chart, and within three weeks of the excision I amputated the thigh. The patient made a rapid recovery, and the wound healed, with the exception of one of the lateral margins, which continued to discharge pus and sanious matter until a piece of drainage tube was removed spontaneously, one month ago. He is now fat and hearty, and, although not a beautiful specimen of humanity, is a remarkable instance of what the system can endure after long exhausting suppuration.

As far as I can remember, Mr. Furneaux Jordan was the first who recommended excision of the head of the femur in cases requiring amputation at the hip, in order to diminish shock. The photograph shows long flaps. This is due to the fact that I first excised just below the trochanters, and later at the amputation simply made an incision over the shaft of the bone down to the middle of the thigh. There was very little hæmorrhage. The femur was found on removal to be necrosed all the way to the articular surfaces of the condyles.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Management of Shipping—National Pension Fund for Nurses—Abdominal Puncture in Tympantites—Opium smoking in London—Curious Accident to an Eye—Purification of the Thames—The Galen Club.

Dr. Collinridge, Medical Officer of Health for the Port of London, in his report for the latter half of 1887, shows that considerable progress is being made in the sanitary management of shipping. During the six months over ten thousand vessels were inspected, nearly 88 per cent. of which were sailing under the British flag. In thirteen cases the ships were fumigated, five on account of small-pox, two for measles, two for enteric fever, one for scarlatina, one for yellow fever, one for chicken-pox, and one in consequence of the condemnation of its cargo of over 5000 quarters of beef. Altogether some sixty-four cases of infectious illness were reported, in the majority of which proper disinfection had already been applied by the authorities of the particular ships. In one instance, however, it seems that a vessel with three cases of small-pox on board was passed by the medical officer at Plymouth and allowed to land six men

there while the patients were sent on to London in order to avoid the two or three hours delay which would have been caused by landing them. The Local Government Board thought not only that this proceeding but the explanations offered of it were unsatisfactory.

Mr. Henry C. Burdett is to be congratulated upon the success which has at length crowned his persistent efforts to found a National pension fund for nurses. Lord Rothschild, Mr. H. H. Gibbs, Mr. E. A. Hambro and Mr. I. S. Morgan have each deposited £5,000 as security for annuitants and policy holders, thus supplying the reserve without which the effort must have failed. The scheme provides a number of methods by which nurses or other officials employed in hospitals or kindred institutions can provide for their old age and secure assistance in time of sickness. It is proposed to guarantee a certain minimum pension of £15, £22 10s. or £30 a year, in return for quarterly payments which vary in amount according to the sums assured, the age at which such payments begin and the age at which the pension is to be received. By slightly larger payments a sick allowance of from ten to twenty shillings a week can be secured. By another arrangement two-thirds of the premium can be made payable at the age of 50, the remaining third not commencing till ten years later. All these schemes are guaranteed, but it is hoped that the bonus fund will make it possible to raise the £15 pension to £26 and to add to the other sums about one-third of their respective amounts.

An exceedingly interesting case of treatment of tympanites by abdominal puncture, came up before the last meeting of the Hunterian Society. The patient, a man aged 46, came under treatment during the autumn of last year, with vomiting, paroxysmal pain, and constipation of about ten days' duration. Examination of the abdomen showed considerable fullness, but no humor could be discovered, and rectal examination revealed nothing. Enemata and the passage of a tube revealed nothing. The patient would not consent to colotomy, therefore puncture of the intestine to relieve distension was resorted to as the only treatment which promised relief. Eight punctures were made, with considerable relief to the distension, but a violent attack of peristaltic contraction set in about an hour after it. Three days later the intestine was again punctured in three places, and in order to prevent peristalsis, two precautions were taken, namely, hypodermic injection of morphia-atropine and use of a large aspirating needle. No violent peristalsis followed, and a very large amount of gas was liberated. Forty-eight hours later the bowels were opened. All went well for fourteen days, when symptoms of obstruction again returned, and puncture again became necessary, the same precautions as previously being taken, and in the course of the following three weeks puncturing was four times repeated. Although great temporary relief was obtained, the patient gradually sank. At the autopsy an annular stricture was discovered in the first part of the rectum, but no evidence of peritonitis or extravasation of feces, and with the exception of cer-

tain small spots, no trace of the puncture was visible in the wall of the bowel.

It is not surprising that the attention of medical men, as well as of philanthropists, has been directed to the increasing prevalence of the vice of opium-smoking in the neighborhood of the London docks. At the present time there are seven opium dens within a short distance of one another, and it is also a melancholy fact that in the same places of resort may be found many English women of the lowest class. The medical journals have suggested that the State cannot afford altogether to ignore this state of things. It is stated that a nurse who, for the purpose of washing out a bottle which had contained glycerin, poured some nitric acid into it, with the result that the bottle burst in her hands, and that her face was severely burned.

A strange accident recently happened to one of the attendants at a hippodrome in London. The man suddenly felt his eye cut with, as he supposed, a pebble kicked up by one of the ponies who were being trained. He was admitted to the West London Hospital, and on the following day, there being severe panophthalmitis, the operation of enucleation was performed with the best possible results. A curious thing was that, although the man was at the time of the accident standing beyond reach of the whip, a knot of a whip was found to have pierced the ball just below the horizontal meridian of the corneo-sclerotic junction and to have become imbedded in the vitreous humor. It was supposed that the thong had become heated and the knot detached had flown off at great speed.

Some of the members of the Board of Works proposed that 100 tons a week of the permanganate of soda should be used to purify the water of the Thames during the ensuing summer. It was argued that about £40,000 worth of permanganate would be required during the year. The subject was eventually, after much discussion, referred to a select committee.

Medical men have now a new club at the West end styled the "Galen Club."

DOMESTIC CORRESPONDENCE

HOW IT STRIKES THE COUNTRY PRACTITIONER.

Dear Sir:—When the country practitioner of today takes up his medical journal he reads with awe not unmixed with incredulity, the earnest discussions of his city brethren of the healing art, as to whether the obstetric practitioner should or should not be held legally responsible for his puerperal fever cases unless he douche the vagina and himself with a two per cent. solution of the bichloride. And it quite naturally occurs to the aforesaid c. p. to wonder why puerperal fever is a disease of the cities and dense centres of population where these things are done, and is almost unknown in the rural districts where such refined methods do not prevail. I venture the assertion that not one country practitioner

in fifty uses any antiseptic precaution beyond cleanliness.

Who, more than this same class, who by turns are called into the domain of surgery, gynecology, medicine and obstetrics, would more likely become contagion bearers. His manifold and varied duties invite to habits of carelessness if not slovenliness in person and attire. When in the presence of the spotless dress and immaculate person of his city brother, he bashfully pockets his hands, well knowing that hands which harness his horses, and blacken his boots, if they do not even carry the soft coal on wash days when his wife does the cooking while the one servant, maid of all work, is busy with the washing, will hardly compare in silky softness and pinkness of nails with the taper digits of his esteemed confrère. But are these stubby fingered, browned and blistered hands any less capable of conveying contagion, of being coated over with the subtle and invisible microorganisms which haunt the day dreams of the *germaniac*? "If not, why not?"

During a practice of six years in Central Illinois it was my fortune to attend between two hundred and three hundred cases of labor. The only fatal case I ever saw in child-bed at term was a lady who was suffering at the time of her confinement, and had been for three days, from a violent attack of facial erysipelas, from which, quite naturally, was evolved a puerperal peritonitis, which speedily proved fatal. All but this auto-inoculated case progressed quite favorably, and none more so than those immediately succeeding this one. It is but fair to add that owing to the nature of this case, I washed my hands and arms thoroughly in carbolized hot water before taking charge of another. Have never used an antiseptic vaginal douche except to correct the fetor of the lochia some days after confinement.

These cases occurred in all walks of life, from the one-room hovel of the extremely destitute where a large family existed, and where it was contamination to touch the dirt begrimed bedding on which the accouchement occurred, to the spacious and elegant country home of the well-to-do farmer, where the sheets were of snowy whiteness and where the microorganism would find himself in constant danger from the onslaught of scrubbing brush, dust cloth and broom. Add to this the nervous anxiety of a man often far from home and worried about other cases dependent upon him, and it goes without saying that there were frequent and prolonged vaginal examinations with attempted digital dilatation of the os. Shades of Semmelweis, how did any escape! The only antiseptic precaution, if such common decency and prudence can be so called, was washing the hands in clean water and soap and cleaning the finger nails before the first examination.

When an undergraduate I remember our professor of obstetrics opposed frequent digital examinations on the ground that it needlessly removed the lubricating mucus so liberally supplied to the parturient canal; but does not an aqueous douche have the same objection? I know practitioners who have attended their thousands of cases without a fatal puerperal case, and who have practiced no preliminary antiseptics but strict cleanliness.

The fact is, there appears to be a medical tendency to take up every European suggestion or hypothesis as our young men excuse oddities in dress by saying, "It's so English, you know."

Some years ago we had 40 and 50 gr. doses of quinine for hyperpyrexia, with perhaps a sudden cold bath as antipyretic in typhoid.

The latest fad is this germ-mania. A physician in a certain city not three hundred miles from Chicago was called in excitedly by an anxious soon-to-be father, whose chosen *modern method* attendant he had not found at his office. But before Dr. Ordinary could get there Dr. Extraordinary had returned and answered the call. When our friend Dr. O. arrived he was ushered unceremoniously into the sick chamber, and though an old man of years of obstetric experience, he blushed at the sight that met his gaze, and retreated precipitately, for there, alone with his patient, sat Dr. Extraordinary carefully *sponging his patient's nude body* with, it is *presumed*, the orthodox two per cent. solution. Not a thread of germ-concealing garment had this poor victim of a modern idea. This may do for a Vienna hospital, but is the modesty and loveliness of American womanhood to be sacrificed on the altar of this attenuated micro-organic moonshine?

This is the "whither" of our tendency unless somebody calls a halt, or at least that is the impression of at least one

COUNTRY PRACTITIONER.

STATE MEDICINE.

State, Interstate, National and International Sanitary and Quarantine Code, Prepared for the United States of America.

BY JOSEPH JONES, M.D.,
OF NEW ORLEANS, LA.

PRESIDENT OF THE LOUISIANA STATE MEDICAL SOCIETY, ETC.

(Extract from Report on Organization, April 25, 1888.)

In my address to the regular medical profession of Louisiana on November 14, 1887, it was not the intention of the brief observations relating to *Public and International Hygiene* to revise any organization such as the National Board of Health, or to give any support to the Bill recently introduced into the United States Congress (H. B. 1,526): "*To prevent the Introduction of Contagious and Infectious Diseases, and to establish a Bureau of Health*," or to disparage the value of the labors of the United States Marine Hospital Service, or of existing boards of health.

Our defense of the police powers and quarantine laws and system of Louisiana against the persistent and unjust attacks of the National Board of Health has been fully and permanently placed on record in the *Reports of the Board of Health of the State of Louisiana* for 1880, 1881, 1882 and 1883; and we are not disposed to revive old issues.

The imperfections of the Bill (H. B. 1,526) now before Congress are fully set forth in the letter of the Secretary of the United States Treasury to the Committee on Commerce, bearing date Washington, D. C., Treasury Department, February 21, 1888.

Our views may thus be formulated:

1. It is important that uniform quarantine laws should be formulated for the entire Republic, as will be manifest upon the consideration of the following:

(a) The population of the United States of America now exceeds forty millions, and is rapidly increasing.

(b) The United States, in virtue of its central geographical position, between the Atlantic and Pacific Oceans, and with the Gulf of Mexico, the Antilles and the Republic of Mexico on the south, is perpetually exposed to the introduction of foreign pestilence.

(c) The United States, either annually or at certain intervals, is exposed to the introduction of small-pox and cholera from Europe and Canada; to the introduction of leprosy and small-pox from China and Japan; and to the annual introduction of yellow fever from the Antilles and the Republic of Mexico, and the Central and South American cities.

2. The *Police Powers* of the several States and Territories composing the great American Republic should be fully recognized in any system of internal and external sanitation and quarantine.

3. The greatest diversity prevails in the sanitary and quarantine laws and regulations of the individual States and Territories.

The quarantine systems present different degrees of perfection.

In times of pestilence, the Interstate intercourse and traffic are liable to sudden and arbitrary interruption; and the brutal *shot-gun quarantine* may be substituted for the dictates of humanity and the teachings of sanitary science.

4. The United States Marine Hospital Service, under the direction of the President of the United States and of the Secretary of the Treasury, has rendered and is capable of rendering important service to the Nation, in the exclusion of foreign pestilence.

5. The sanitary and quarantine laws of the several States should be perfected and unified, and the most perfect accord established between the individual States, on the one hand, and with the General Government on the other.

6. The most direct method and the wisest and most liberal, and the one most in accord with the spirit of our National and State institutions, appears to be the appointment on the part of the individual States, and of the General Government, of representatives duly commissioned, and empowered to meet in *general assembly*, at such places and times as may be deemed best, for the thorough discussion of the existing sanitary and quarantine laws, and for the preparation of a National Sanitary and Quarantine Code.

7. THE NATIONAL SANITARY AND QUARANTINE CODE should define clearly the relations of the individual States to each other, and to the United States Government, on all matters relating to the domestic sanitation of the individual States, and to public and International hygiene. The regulations should have due regard to differences of climate, elevation, endemic and epidemic diseases, and commercial rela-

tions; and the burden of maintaining maritime quarantine should be borne by the Republic, and should not be inflicted upon commerce, or upon the maritime States alone.

8. The members of the Association charged with the examination, enlargement, consolidation and perfection of the sanitary and quarantine regulations and laws of the several States, and the elaboration of the *National Sanitary and Quarantine Code*, should be men of the greatest learning, wisdom and experience in the medical and legal professions. They should receive fixed and ample salaries, so as to enable the Congress to work with due care and deliberation until its important labors are completed.

9. After the completion of the labors of the Congress, the Sanitary and Quarantine Code should be submitted to the individual States for their ratification; and after adoption by a majority of the States composing the American Union, the National Sanitary and Quarantine Code shall become National, and shall receive the support of the General Government.

It will be observed that the plan here proposed is designed to ascertain and formulate the police powers of the people in sanitary and quarantine matters, and is opposed to all hasty, and sectional, and arbitrary legislation, as advised by politicians, or by ambitious and scheming self-constituted guardians of the public health.

156 Washington St., New Orleans, La., May 5, 1888.

MISCELLANEOUS.

NEW YORK STATE MEDICAL ASSOCIATION, *Fifth District Branch*, will hold its fourth annual meeting in the Magnolia Lodge Rooms, Brooklyn, N. Y., on Tuesday, May 22, 1888. Valuable papers and topics of interest will fully occupy the time of the meeting.

THE MEDICAL SOCIETY OF NEW JERSEY will hold its one hundred and twenty-second annual meeting at the Heath House, Schooley's Mountain, N. J., on Tuesday and Wednesday, June 12 and 13, 1888. For further information apply to Wm. Elmer, Jr., Corresponding Secretary, Trenton, N. J.

PAJOT'S ERGOT-MILL.—Sir James Paget would doubtless be surprised to read in the last issue of an American contemporary that "Professor Paget, carries in his obstetric bag an ergot-mill, resembling a small coffee-mill, compact in form, and designed to grind up ergot freshly for use." Pajot claims that ergot is unreliable unless freshly pulverized, and in order to have it in this form he grinds it for immediate use.

DEATH OF DR. JOSEPH AUB.—We regret to announce the death of Dr. Aub, the well-known ophthalmologist and otologist of Cincinnati, which occurred a few days ago. He was in the prime of life, but had been suffering with heart trouble for some time.

Cincinnati has suffered severe professional loss within the past few weeks in the death of Dr. Aub, in that of Dr. C. S. Muscroft, which took place on May 1, and in the probably fatal injury of Dr. C. D. Palmer on May 2, when he was thrown from his buggy.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.—Two volumes of the Transactions of the recent Medical Congress in Washington, are ready and being distributed to members as rapidly as possible. Through the active agency of the late Secretary-General Hamilton, 150 members received these volumes while in attendance on the annual meeting of the

American Medical Association, in Cincinnati. The work of publication has been done in excellent style thus far. The third volume is also by this time complete, and the remaining two will follow within the next three months; making five large volumes, and constituting a valuable library in themselves.

UNIVERSITY MEDICAL MAGAZINE.—In accordance with a resolution adopted by the Faculty of Medicine of the University of Pennsylvania, the first number of a handsome 64 page medical monthly will be issued October 1, 1888, under the title *The University Medical Magazine*, edited under the auspices of the Alumni and Faculty of Medicine of the University of Pennsylvania. It will be edited by a staff from the Professors of the University, the editorial committee being Dr. George E. de Schweinitz and Dr. Hobart A. Hare. It will be published by A. L. Hummel, 224 S. Sixteenth St., Philadelphia.

NINTH INTERNATIONAL MEDICAL CONGRESS EXPENDITURES.—*Treasury Department, Washington, April 30, 1888.*

Sir: I have the honor to transmit herewith, for the information of the House of Representatives, an itemized statement of the expenditures from the appropriation for "the purpose of entertaining and providing for the expenses of the Ninth International Medical Congress," held in this city September 5 to 12, 1887.

Very respectfully, your obedient servant,
C. S. FAIRCHILD, Sec'y.

The Speaker of the House of Representatives.

EXPENDITURES.

1887.	
June and July, Pay-roll, Ella Whiting, clerk committee of arrangements.....	\$ 150.00
Aug. 13, Gray & Clark, son, blank books, engraved cards and envelopes local committee, as per vouchers in original copy.....	33.75
Aug. 3, Gibson Brothers, printing registration blanks.....	116.68
Aug. 9-17, Bailey, Banks & Biddle, engraved cards and envelopes.....	17.50
Aug. 20, Bailey, Banks & Biddle, steel-plate engraving 3,000 invitation cards, etc.....	360.00
Aug. 2, Thomas McGill & Co., printing 600 slips (rebate on railroad fare).....	331.00
Sept. 5 Wm. F. Fell & Co., miscellaneous printing (5000 programmes, 500 abstracts).....	3.00
Sept. 1-10, James L. Klee, services (German interpreter).....	789.47
Sept. 10, Rémy Lefranc, services (French interpreter).....	20.00
Sept. Bailey, Banks & Biddle, 300 white metal medals (badges).....	30.00
Sept. E. Morrison, 4,000 envelopes.....	450.00
Sept. Church of Our Father, rent of church.....	18.00
Sept. J. H. Weirick, clerical services.....	50.00
Sept. Albaugh's Opera House, rent of opera house.....	24.00
Sept. Dr. D. C. Patterson:	450.00
Amt. paid for armory, Washington Light Infantry	210.00
Amt. paid for electric-light plant at Pension Office	270.00
Sept. National Rifles, rent of hall.....	125.00
Sept. Miss Ella Whiting, clerk for chairman committee of arrangements for August, 1887.....	75.00
Sept. Gibson Brothers, printing engraving, etc.....	106.70
Sept. J. W. Walling, rent of desk.....	5.00
Sept. Pennsylvania Railroad Company, per R. A. Parks, general southeastern passenger agent, transportation furnished foreign delegates of International Medical Congress to Niagara Falls and return, special train, Pullman cars.....	4,480.00
Sept. L. G. Marino, rent of Masonic Hall.....	150.00
Sept. Bailey, Banks & Biddle, 3,000 menus engraved on steel.....	1,245.00
Sept. Society of the Grand Army of the Republic, rent of four halls.....	225.00
Sept. Thomas McGill & Co., printing, etc.....	4.00
Sept. First Congregational Society, rent of church.....	200.00
Sept. Washington Gas Light Company, gas furnished.....	30.38
Total.....	9,958.88
APPROPRIATION.	
Act appropriated March 3, 1887.....	\$10,000.00
Expenditures.....	9,958.88
Balance.....	1.12

NEW BOOKS RECEIVED.

Dissolution and Evolution and the Science of Medicine. By C. Pittfield Mitchell. London: Longmans, Green & Co.
A Practical Treatise on Diseases of the Skin. Second Edition. By James Nevins Hyde. Philadelphia: Lea Brothers & Co.
A Treatise on Dislocations. By Louis A. Stimson. Philadelphia: Lea Brothers & Co.

The Southern Cattle Plague of the United States, with especial relation to its Resemblance to the Yellow Fever. By Frank S. Billings.
Lesions of the Vagina and Pelvic Floor, with especial reference to Uterine and Vaginal Prolapse. By B. E. Hadra. Philadelphia: Ricards, McMullin & Co.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MAY 5, 1888, TO MAY 15, 1888.

Lieut.-Col. James C. McKee, Surgeon, granted leave of absence for one month. S. O. 107, A. G. O., May 9, 1888.
Major Chas. R. Greenleaf, Surgeon, Major Robert M. O'Reilly, Surgeon, Capt. Jno. O. Skinner, Asst Surgeon, detailed as members of a board of medical officers to assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of members of the graduating class and of the candidates for admission to the Academy. S. O. 104, A. G. O., May 5, 1888.
Major Harvey E. Brown, Surgeon, the leave of absence for seven days granted by Order 68, Ft. Barrancas, Fla., May 2, 1888, is extended twelve days. S. O. 90, Div. Atlantic, May 8, 1888.
Capt. Leonard V. Loring, Asst. Surgeon, granted leave of absence for three months, on surgeon's certificate of disability. S. O. 105, A. G. O., May 7, 1888.
Capt. Paul R. Brown, Asst. Surgeon, granted leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Division of the Atlantic. S. O. 107, A. G. O., May 9, 1888.
Capt. Robert B. Benham, Asst. Surgeon, to proceed from Ft. DuChesne to Ft. Douglas, Utah, and report to commanding officer of that post, not later than the 25th inst., to accompany battalion of Sixth Infantry to Ft. Lewis, Col. Upon completion of this duty, will return to his station, Ft. DuChesne, Utah. S. O. 33, Dept. Platte, May 5, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 12, 1888.

P. A. Surgeon A. G. Cabell, detached from "Adams," proceed home and wait orders.
Surgeon M. H. Simons, detached from Naval Academy and to practice ship "Constitution."
Medical Director P. J. Horewitz, leave of absence for six months, to leave the United States.
A Naval Medical Examining Board is now in session at the Naval Hospital, Philadelphia, for the examination of candidates for admission to the Medical Corps of the Navy. There are eleven vacancies in the list of Asst. Surgeons. Permits for examination can be obtained on application to the Secretary of the Navy.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING MAY 5, 1888.

Surgeon P. H. Bailhache, to proceed to New York, N. Y., for temporary duty. May 1, 1888.
Surgeon W. H. Hutten, detailed as President of Board to report as to quarantine establishment at North Chandelour Island, Gulf of Mexico. May 4, 1888.
Surgeon Walter Wyman, granted leave of absence for fourteen days. May 4, 1888.
Surgeon G. W. Stoner, detailed as chairman of Board for the physical examination of candidates for appointment and promotion, Revenue Marine Service. May 5, 1888.
P. A. Surgeon F. W. Mead, detailed as recorder of Board for the physical examination of candidates for appointment and promotion, Revenue Marine Service. May 4, 1888.
P. A. Surgeon H. R. Carter, detailed as recorder of Board to report as to quarantine establishment at North Chandelour Island, Gulf of Mexico. May 4, 1888.
P. A. Surgeon S. C. Devan, relieved from duty at Sapelo Quarantine; to assume charge of the Service at Savannah, Ga. May 3, 1888.
P. A. Surgeon J. H. White, relieved from duty at Savannah, Ga; to assume charge of Sapelo Quarantine Station. May 3, 1888.

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ADDRESS IN STATE MEDICINE.

Delivered at the Thirtieth Annual Meeting of the American Medical Association, May 10, 1888.

BY HENRY P. WALCOTT, M.D.,
OF CAMBRIDGE, MASS.

Members of the American Medical Association:

When a committee of this body invited me to deliver the address which Dr. Cabell felt himself unable to undertake, I accepted the invitation with much hesitation, well aware that, in attempting to fill the place which all had hoped to see occupied by the honored head of our first—unfortunately, perhaps our last, National health organization, I should fall far below your proper expectations.

Mingled with this natural reluctance is also the knowledge that I have not the oratorical skill to repeat in any new or attractive manner those general statements as to the claims of hygiene and State preventive medicine upon the public and our profession which have been so often and so eloquently brought to your attention.

Neither am I quite willing to limit myself to an attempt to describe the progress of public preventive medicine during the past year. But I shall assume that my text has been given me in the fact which is probably the reason for my invitation to occupy this most honorable place. I mean my connection with the State Board of Health of Massachusetts, now in the twentieth year of its existence.

This Board has passed through experiences which are more or less true of every other State Board of Health in this country—it has sometimes failed where success was due and has succeeded where defeat seemed inevitable. It has illustrated the various stages of progress in the attempt on the part of the State to prevent disease, and has also, at some periods in its history, suffered from the interference of politicians and self-seekers.

This story, interesting as it might be in Massachusetts, would be quite out of place here, were it not true that we also have a fairly kept record of our vital statistics from the year 1842 to the present time.

Therefore it has seemed to me that it would not be unprofitable, in this twentieth year of State preventive medicine, that I should attempt to answer some of the questions that may fairly be asked of those who have had a share in the public responsibility for the prevention of disease.

You will not need the assurance, I hope, that the example of my own State is used in no limited and provincial spirit. We have not hesitated to borrow from our brothers in other States and countries anything that offered the slightest promise of help in the unending struggle for the preservation of human life. We have relied upon their counsel and assistance, and have not been disappointed. On the other hand, the legislative act by which our Board was established has served as a model for many of the organizations subsequently formed. Our interests have thus been common, our methods similar, and the results will be not much unlike.

Another reason for using this local experience lies in the fact that our restricted territory and comparatively large population have brought about conditions which, fortunately for the majority of the States of the Union, will remain in the distant future, but which, sooner or later, will come to all, and almost inevitably sooner than they are expected.

That these experiences can be submitted to no tribunal so competent to correctly interpret them as the medical profession is a proposition which scarcely needs an argument.

Although State Medicine, as the name implies, is the result of legislation in which our profession has little or no share, and legislation which, oftentimes, is not immediately suggested by medical men, still it is quite true that legislative bodies have rarely, if ever, acted upon measures concerning the public health without some understanding of the views of our profession, expressed publicly in the hearings before appropriate committees of the legislative bodies, or privately in the more convincing interchanges of opinion between legislator and constituent. But while this is true in a general sense of the influence of the profession, it is not true that the best medical opinion receives the highest consideration, for it is not the loudest-voiced and it is constitutionally unwilling to enter the field of politics.

It should be, then, one of the functions of great representative assemblies of the profession, such as this, to give voice to the deliberate opinions of those who are the only competent critics of the failures or successes of State Medicine.

In the earlier days of sanitary reform great improvements in the general health of communities were brought about by public works for the protection of water supplies and the better drainage of cities; these were carried on under the direction of eminent engineers, who received, and properly, the

praises due to their successful undertakings. But these very successes had to a certain extent misled the public, which was now inclined to believe that a water supply pure from ordinary contamination, a system of sewers that removed without offensive smells waste matters, were the beginning and end of sanitary regulation. The sanitary plumber, as he advertises himself, is another instance of the same tendency. While there is no question that something has been added to the security of human life, and much to its comfort, by the better planned and better constructed arrangements for our domestic conveniences, still it is true that the real question has been little advanced by all this—the question how the filth diseases, so-called, originate and how they are propagated. Many of them are found in connection with bad plumbing; some of them, also, where the plumbing appears to be perfect. The study of their origin and spread must remain in the hands of trained observers of the medical profession, for they alone can read the characters in which the evidence is recorded and assign to the various details their relative value. It is, therefore, essential that the relations between the health authorities, whether they exist in the form of boards or single commissioner, and the great body of the practitioners of medicine, should be founded in confidence: for without these supports no executive sanitary power can long maintain itself, however firmly entrenched behind political influence.

I do not mean to say that there will not be seasons during which legislative bodies will seem to arrogate to themselves the special knowledge which belongs to our calling; but it will be observed that this happens only in the years of comparative good health and prosperity. Let disaster come; let any one of the great pestilences invade the land, and all will be changed. Powers will be conferred upon boards of health never dreamed of by the founders of the Republic, and appropriations of money made which would, if used in season, have averted many pestilences. Our rulers allow the dykes to be broken through and the whole country to be flooded. The labor of one man might have saved the dyke if applied in season; the toil and the lives of thousands may be the penalty for the neglect.

These great epidemics of contagious disease are treated by Governments generally very much as our ancestors used their weapon-salve; the remedy was rubbed upon the wound that inflicted the wound, and the patient was for the time an object of secondary importance.

Would it not be as unreasonable, in this day, to establish a quarantine station at the entrance of a harbor and then to abandon all sanitary work in the threatened district, and to rely for protection on that alone which never has been and never will be, in the weakness of man, a sufficient safeguard?

Before leaving this branch of the subject I wish to call your attention for a moment to the anxieties so frequently shown by our National legislators as to the unconstitutionality of the sanitary legislation which has been from time to time demanded in the interest of the public health. It is, I presume, true

that the words "public health" do not occur in the written Constitution of the United States, and they do not appear there for the simple reason that in the year 1787 men knew very little practically about the prevention of disease, their efforts to limit epidemics consisted in brutal and irrational systems of quarantine, which did not protect; and are only now giving way to the humane and scientific methods of medical inspection, disinfection, at times detention on the frontier, and prompt isolation within the country, of those suffering from communicable diseases.

Public hygiene, which lies at the foundation of modern civilized life, is, almost literally a creation of the present day. In earlier times under the scourge of some startling inroad of disease, States and smaller communities had made occasional and spasmodic attempts to repress great epidemics—but a belief in the prevention of disease, as we understand these words, did not exist; and it is within the active life of men now living that this important branch of medicine has received its proper consideration. One of the first among the medical teachers of this country to direct attention to preventive medicine was Dr. Elisha Bartlett, sometime Professor of the Theory and Practice of Medicine in the Transylvania School of Medicine, in Kentucky, a man who exercised by his teachings and writings a great and sound influence throughout the country. In his essay on the Philosophy of Medical Science, published in 1844, he claims that the great work of the next and succeeding generations will be the best methods of preventing as well as curing disease.

The words of that great physician Dr. Samuel D. Gross, himself known and honored wherever the science or the art of surgery is recognized, shows how fully this prediction has been realized. It seems to me singularly appropriate that the words should have been spoken upon the occasion of the dedication of a monument to the memory of Ephraim McDowell, who gave to the world that surgical operation which in the cure of disease has given more years to woman's life than any other.

"The great question of the day is not this operation or that; not ovariectomy or lithotomy, or a hip-joint amputation, which have reflected so much glory upon American medicine, but *preventive medicine*, the hygiene of our persons, our dwellings, our streets, in a word, our surroundings, whatever and wherever they may be, whether in city, town, hamlet or country. This is the great problem of the day, the question which you, as the representatives of the rising generation of physicians, should urge in season and out of season, upon the attention of your fellow-citizens—the question which above and beyond all others should engage your most serious thoughts and elicit your most earnest coöperation."

Many of our law-makers have discovered, I believe, no other authority for sanitary legislation on the part of the General Government than that which is contained in the section of the Constitution which declares that Congress, among other functions, shall have power "to regulate commerce." There does not appear to be any clearly expressed provision in the above-named document for the appropriation of

money to help exterminate contagious pleuro-pneumonia in cattle, and yet the forty-ninth Congress did appropriate \$500,000 for that purpose, and wisely. I am sure we shall all say. I read, however, in this same section of the Constitution that Congress shall also have power to provide "for the general welfare of the United States."

In our own day we have seen National, State and local laws swept away by cholera and yellow fever. Let us hope then that some ingenious law-maker may find in these words a sufficient authority for the expenditure of enough of the public money, at least, to secure some of those thorough investigations of preventable disease which have characterized the work of the Gesundheitsamt in Germany and the Local Government Board in England.

When it can be deliberately stated—as I believe the experience of the last ten years makes it possible for us to state—that improved methods of research, that the knowledge already gained, have made it almost certain that coordinated investigations properly encouraged and supported by such aid as only a great government can give, would lead to the discovery of the causes of yellow fever and malarial fever in the first place, and in the second, to rational methods of dealing with these most formidable scourges of the land in the way of prevention or of cure. Then, I say, it does seem in the highest degree absurd, that any form of government should deliberately deprive itself of the sanitary gains which contribute so directly to the preservation of "life, liberty and the pursuit of happiness."

The State Board of Health, of Massachusetts, was established by legislative action in 1869. Local boards of health, of not much efficiency, had existed from the beginning of the century. The State Board of Health entered at once upon its duties, which were advisory rather than executive. Under the lead of wise men the public intelligence was quickened upon all the important sanitary questions to such a degree that the succeeding years brought to the Board added executive power and larger appropriations. Seven thousand five hundred dollars were appropriated for the work of the Board in the earlier years; in the present year sixty thousand dollars are the conclusive evidence of the people's belief in the value of protective medicine, and this sum does not include the large sum spent upon the registration report.

After ten years of most successful administration it was thought advisable by the legislature of the day to very widely extend the functions of the Board by reorganization and the addition of the power of Commissioners in Lunacy and of the Supervision of the Public Charities. The burden proved too great and after a few years the original organization was restored with enlarged powers.

The right of the people to pure air, soil, water and food are recognized by the laws of the Commonwealth, and various statutes have been passed to secure these results and to prevent their infringement. The Board is charged to some extent with the duty of enforcing these rights and preventing and punishing any violation of them; having for this purpose

power coordinate with that of the local boards of health.

The business of investigating and gathering information as to any matter pertaining to the public health, and of diffusing such information among the people, is also included in its functions.

Among the matters of which it thus takes cognizance are the causes and prevention of infectious diseases. For this purpose coordinate powers with local boards of health are given to the Board: the suppression of nuisances, including the regulation of noxious and offensive trades; the collection and diffusion of information relative to industrial hygiene, or the effects of different occupations, industries and domestic pursuits upon people at various ages and under various conditions of life; the hygiene of schools, school buildings and public institutions; the examination and investigation of public water supplies and public ice supplies, and the prevention of their pollution; the investigation of drainage and sewerage plans or systems so far as they relate to the public health; the disposal and transportation of the dead; the inspection of food, drugs, and other articles affecting the public health; inquiries relative to the amount of intemperance from the use of stimulants and narcotics, and the remedies therefor; investigations as to the infectious diseases of animals so far as they affect man; the editing of the registration report of the State.

What effect has all this had upon the health of the people as shown by the mortality rate; for that is the only trustworthy standard, under our present means of registration, by which to determine the effects of measures taken for the prevention of disease. Without the assistance of well conceived and carefully executed tables of vital statistics, communities are liable to the most erroneous impressions as to the actual effect of their surroundings upon the general health. Hence, our legislation in sanitary matters is in constant danger of becoming the reflex merely of vague rumors, hasty and incorrectly formed conclusions, or statements based solely on commercial and interested motives, unless it is distinctly understood that the duration of human life, the diseases by which it is cut short, and the preventable or inevitable character of the disease, so far as we now understand these qualities, are things which can be determined by intelligent and continuous investigation by experts, and should be no more the subject of guess-work than the truths of mathematics or the facts of chemistry.

Inasmuch as the task which I have taken upon myself is the proof of the value of preventive medicine, let us take not the mortality rate as a whole, but the rates from certain specified diseases which are admitted to be preventable and controllable by means of vaccination, isolation and disinfection, and suitable sanitary precautions.

Let us then compare these rates in successive years not only with each other, but also with the rates of those diseases in respect to which we possess no well recognized powers of prevention.

This comparison shall be made during the period of the existence of our State Board of Health; not with the presumption that statute regulation, either

in the hands of a State or municipal board of health, deserves all the credit of the improvement obtained.

During this period there has been an active and intelligent interest in all sanitary questions, steps have been taken on all sides for procuring purer water supplies, better drainage, food and drugs free from adulteration; tenement houses have been much improved, sometimes by private undertaking, and oftentimes under the compulsion of the law. But in all these movements the influence of the sanitarian has been predominant, and the improvement in the health of the people is regarded as the only just standard for the measure of our success.

When regard is had to the fact that Massachusetts is one of the oldest settlements in the country and, with the exception of Rhode Island, the most densely populated State in the Union, it would not be surprising to find there a relatively high death-rate. This would be true even if the conditions which favor health there were equal to those found in other States.

The average death-rate for the thirty-six years 1851-1886 was 19.40 per 1,000 living; the lowest death-rate in this period was 16.09, in the year 1867; the highest death-rate that of 1872, being 22.85 per 1,000. It was 18.38 per 1,000 in 1869, and 18.85 in the last registration year, 1886. So far as these figures go, we have no changes of consequence.

But if we turn to the general classification of causes of disease into zymotic, constitutional, local, developmental and violent, we find that there has been an almost constant decrease in the class of zymotic diseases during the period now under consideration.

PERCENTAGE OF CAUSES OF DEATHS BY CLASSES.

YEARS.	CLASSES.				
	Zymotic.	Constitutional.	Local.	Developmental.	Violent Deaths.
1870	25.6	26.6	28.1	15.6	4.1
1875	28.6	24.3	31.8	11.2	4.1
1880	24.5	23.7	38.0	10.1	3.7
1885	19.0	23.7	42.7	10.7	3.9

The years taken are census years.

The changes in the class of constitutional diseases have not been so marked as in those of the zymotic class, although the tendency appears to be constant in the direction of a decrease.

In the class of local diseases there has been a decided increase, from 28.1 in 1870 to 42.7 in 1885.

In the class of deaths from developmental causes the changes in the last three census years are insignificant. As this class contains deaths from teething and old age, it is to be expected that more accurate diagnosis will diminish its relative importance.

The percentage of violent deaths remains throughout essentially unchanged.

If we arrange the percentages of causes of death from zymotic diseases in two columns of ten years each, we shall find in the first decade, from 1867 to 1876, the average of these percentages to be 27.94; in the second decade, 1877-1886, the average has fallen to 22.4.

Let us examine more carefully the diseases which

we have a reasonable hope of preventing by appropriate sanitary regulations:

We shall find at the head of the list a disease which we can with certainty limit, if not abolish. As we pass down the list we shall come to diseases which are more and more dependent upon the special treatment of a physician or surgeon, and can be but slightly, if at all, affected by the surroundings which the public officer of health can control.

It seems, however, to be true that, with each succeeding year, a larger and larger number of these are found to be the result of influences that can be removed.

For the first time in the registration history of the State a year has passed—1886—without the record of a single death from smallpox, and this notwithstanding the fact that we are in continual communication with countries where the protection of vaccination is not so generally given as it should be, and one of our chief industries, the manufacture of paper, involves the use of materials which always carry with them the possibility of the presence of the contagion of this most persistent disease. Many years of comparative immunity from smallpox had led to a disregard of the stringent laws for compulsory vaccination, and the State paid the usual penalty in 1872 and 1873, the mortality in the former of these years reaching 2.9 per cent. of the deaths from all causes, with 1029 deaths from smallpox. The attention of the authorities was aroused, existing legislation was rigidly enforced, and additional powers, where found necessary, were obtained, and there has been no year since when the percentage of deaths from this cause to deaths from all causes has reached fourteen hundredths (.14) of one per cent.

Typhoid fever has, upon the whole, diminished both relatively and absolutely. In 1886 the percentage of deaths from typhoid fever to deaths from all causes was 2.15; in the year of greatest prevalence, within a period of twenty years—1872—the percentage of deaths from typhoid to deaths from all causes was 4.86, and the death-rate per 10,000 living was 11.1. The diminution in the death-rate from this disease has been especially marked in cities with new water supplies and good systems of sewers. The death-rate from this cause is substantially unchanged in the small country towns.

The death-rates from typhoid fever per 10,000 living, in census years 1865-1885 have been for the State: 1865, 13.4; 1870, 9.1; 1875, 6.4; 1880, 4.9; 1885, 3.9.

Scarlet fever has more than once astonished the medical world by a sudden assumption of great violence and fatality after many years of comparatively harmless prevalence. Graves has called the attention of the profession in a most instructive manner to the experience of Dublin, where from 1804, when an epidemic of great malignancy had come to an end, until 1834, the scarlet fever that occurred was very mild. At the latter date the disease burst in upon the city with its old-time ferocity. It is therefore with some hesitation that I use the figures of the registration as to this disease. The record for thirty years shows a death-rate per 10,000 living re-

duced from 17.2 in 1857, to 1.7 in 1886. Though it is possible that we are only nearing the end of a series of benignant years, and that another may see the return of an epidemic over which we possess little power. Still it is the belief of our most competent observers, that isolation and disinfection have had a sensible effect upon the spread of this disease.

Diphtheria first appeared in our registration in 1858, causing in that year eighteen deaths; reached its highest degree of prevalence in 1877, and since that year has much diminished in frequency, but has not again sunk to the low figures of the years 1870-1873, when it constituted less than 1 per cent. of the deaths from all causes.

If in the present uncertainty of medical diagnosis with reference to croup and diphtheria, it is desirable to consider them together, and all deaths from croup are added to those resulting from diphtheria, we should not obtain conclusions essentially different from those above stated. An examination of our record shows that the reported deaths from croup are slowly and steadily falling in number, and that the two diseases rise and fall together in the scale of prevalence. It is probable, therefore, that a more accurate diagnosis will hereafter transfer to deaths from diphtheria many cases which would, in times past, have been assigned to croup.

The relations of diphtheria to the grosser forms of insanitary conditions, is not yet clearly made out. There is also a probability that some of the lower animals are attacked by it.

The degree of its prevalence in Massachusetts in the United States census year 1880, was almost identical with the rate for the whole country. The general rate was 5039 out of 100,000 deaths from all causes; the rate in Massachusetts was 5010 to the 100,000. In England in 1880 the rate was only 532 per 100,000, which does not vary essentially from the rate of the ten years preceding.

In the city of Boston a notification to the board of health of all cases of diphtheria, as well as of certain other communicable diseases, is compulsory. The board in such cases causes a careful inspection of the premises to be made. In the year 1887, when 1049 cases, with 316 deaths, were reported, 927 houses were examined; 534 were found to be in defective sanitary condition; 393, on the contrary, were in good sanitary condition.

A rigid inspection of 900 houses taken at random in any city would, I think, not be unlikely to show nearly as large a number of houses that would fail to satisfy an examination which is very apt to start out with the determination to find some sanitary defect.

It is a communicable disease in a very marked degree, but does not appear to have any other relation to filth than this, that the absence of proper cleanliness, and the presence of the material of contagion in the food, person or surroundings, are quite sure to go together. It may also be assumed to be probable that a number of mild cases of the disease always exist, and are the unsuspected vehicles of the contagion. We know this to be true of almost all the diseases of this class, and I think we have hith-

erto taken the probable existence of such cases too little into account.

The diarrhoeal diseases, including diarrhoea, dysentery, cholera infantum, cholera morbus, and enteritis, have only changed place in the list as cholera infantum has varied. Cholera infantum, during the period of twenty years, has diminished, though the fall has not been regular; dividing the period of twenty years into two decades, the average of the first yields a death-rate from cholera infantum of 13.51 per 10,000 living; the second an average of 10.32 per 10,000.

Dysentery, which in the first half of this century has several times appeared in epidemics of great severity, has thus far in the second half been steadily diminishing in importance. The improvements in domestic water supplies appear to have had some influence upon this reduction in number, so far at least as the question has been studied in certain cities in the State. Only 243 deaths out of a total of 37,244 are assigned to this disease in 1886.

Malarial fevers caused, in 1886, 32 deaths, of which number 20, or 62.5 per cent., occurred in the five western counties, which have but 26 per cent. of the population. Although serious epidemics have occurred in the eastern counties during the years 1884-5-6, they have thus far had little apparent effect upon the death-rate. Statistics of disease as well as those of mortality would be an additional index of very great value for the sanitary condition of a district. In the case of the disease now under consideration, they would be of unusual value, because portions of our State hitherto exempt have been invaded by malarial fevers, and yet the resulting mortality has been insignificant. We can only say that malarial fevers have increased beyond the increase in our population, and that this tender exotic in New England has unfortunately found some new conditions which favor its development.

The number of deaths from measles has been very variable through this period; this variability in mortality was more noticeable in the last half than in the first half of the period. The average of the last half was also less than in the first half. The number of deaths has ranged from a minimum of 19 deaths in 1879, to 428 in 1872.

MORTALITY FROM PULMONARY CONSUMPTION, BY DECADES, 20 YEARS.

YEARS.	Deaths	Death-rates per 10,000 of Population.	YEARS.	Deaths.	Death-rates per 10,000 of Population.
1867.....	4,362	32.2	1877.....	1,457	32.7
1868.....	4,437	32.2	1878.....	1,324	32.6
1869.....	4,650	32.8	1879.....	1,223	31.4
1870.....	5,005	34.3	1880.....	1,444	32.2
1871.....	5,070	33.2	1881.....	1,886	34.4
1872.....	5,116	33.2	1882.....	1,715	31.7
1873.....	5,336	35.3	1883.....	1,921	34.5
1874.....	5,274	35.8	1884.....	1,705	32.5
1875.....	5,735	34.7	1885.....	1,333	30.3
1876.....	5,327	32.2	1886.....	1,077	29.6
Average.	5,001	33.7	Average.	1,784	31.2

The number of deaths reported as due to consumption in 1886 was 5897. The percentage of deaths from this disease to deaths from all diseases

was 15.83. Arranging the deaths from consumption in two periods, 1867-1876 and 1877-1886, the average of the second decade is found to be 2.5 per 10,000 persons living less than that of the first decade; that is to say, from 33.7 to 31.2. There has thus been an actual decrease in this disease, and more marked in the second decade than in the first.

Our registration report in its present form gives as no satisfactory answer to one of the most important questions that arises in the consideration of this disease. How often and under what conditions is the predisposition to consumption hereditary? It is, in the very nature of our life, unavoidable that every individual must at many times be exposed to the contagion of tuberculosis, and yet it is within every physician's experience that many members of families with very distinct histories of consumption in more than one generation, do escape.

One of the most important and widely spread influences upon the origin and extension of consumption was announced by an honored President of this Association, also the father of State Medicine in Massachusetts—Dr. H. I. Bowditch—fortunately still living in vigorous old age, who, by his announcement and proof of the law of soil moisture and land drainage in their influence upon consumption, has turned the attention of the world to conditions which can be controlled.

Pneumonia has generally held the second place on our mortality lists, and has not diminished in relative frequency in recent years.

The total number of deaths reported as due to cancer in 1886 was 1104; the ratio of fatal cases among females to the whole number has increased as follows: 1881, 64.4; 1882, 64.9; 1883, 67.6; 1884, 66.6; 1885, 68.8; 1886, 69.7. If the statistics relative to cancer during twenty years are divided into two ten-year periods, with death-rates per 10,000 living, we shall find that there has been an increase with a certain degree of uniformity from 2.9 per 10,000, in 1867, to 5.6 in 1886, nearly double.

MORTALITY FROM CANCER, BY DECADES, 20 YEARS.

YEARS.	Deaths.	Death rates per 10,000 of Population.	YEARS.	Deaths.	Death rates per 10,000 of Population.
1867.....	325	2.9	1877.....	640	3.9
1868.....	415	3.2	1878.....	807	4.7
1869.....	407	3.4	1879.....	862	5.2
1870.....	516	3.5	1880.....	928	5.6
1871.....	551	3.3	1881.....	943	5.2
1872.....	542	3.2	1882.....	977	5.3
1873.....	611	3.6	1883.....	1,026	5.4
1874.....	575	3.5	1884.....	1,060	5.5
1875.....	593	3.5	1885.....	1,087	5.7
1876.....	657	3.9	1886.....	1,104	5.6
Average.....	534	3.6	Average.....	948	5.2

In England and Wales very much the same increase has been noted; the proportion of deaths from cancer has increased regularly from 2.7 per 10,000 in 1847, to 5.3 per 10,000 in 1882.

The number of deaths from the group of diseases attributed to the brain was 3844, which, though a little less than in 1885, was still larger than that of any other previous year.

The mortality-rates per 10,000 in the census years 1860, '65, '70, '75, '80, '85, were successively 12.06, 14.39, 14.35, 16.42, 17.0, and 20.01.

DEATH-RATES FROM BRAIN DISEASES IN CENSUS YEARS, AND DEATHS IN 1886.

	DEATH-RATES.					
	1860.	1865.	1870.	1875.	1880.	1885.
Mortality rates per 10,000, from						
Apoplexy.....	1.03	2.68	2.70	2.78	4.10	5.12
Softening of the Brain.....	.36	.33	.58	.59	.68	.65
Paralysis.....	3.26	3.78	4.32	5.43	5.23	5.82
Insanity.....	.58	.59	.71	.71	.71	.96
Cephalitis & Brain Disorders	5.93	7.61	6.04	6.91	6.10	7.46
Totals.....	12.06	14.39	14.35	16.42	17.00	20.01

Deaths from alcoholism appear to have diminished in number, but it is confessed that the death-rate ascribed to intemperance directly is but an imperfect measure of the evils resulting from an excessive use of alcohol. Neither do the figures of the report convey any just idea of the actual or relative prevalence of the venereal diseases.

The fact that Bright's classical description of the diseased processes in the kidney known by his name, was first published in 1837, and the slow progress made in the accurate medical diagnosis of these diseases during the half century, would lead us to expect in the diseases of the kidney an apparent marked increase from year to year.

It has been assumed also that the conditions of modern life have brought about a large actual increase, either from irregular and luxurious living, or improper indulgences in food and drink. It has been claimed by some that the substances now frequently added to standard articles of food and drink for the purpose of adding to their keeping qualities, or of fraudulently adulterating them, have an injurious effect upon these organs.

The difficulties of answering these questions are much enhanced by the fact that in the early years of our legislation, when the real nature of diseases of the kidney was but imperfectly understood, very many of the deaths really due to this class were registered under the head of dropsy. Another large class would appear as diseases of uncertain seat, and diseases "not specified."

With these facts in mind, let us tabulate the deaths from Bright's disease and other diseases of the kidney in one column, and the deaths from dropsy in a parallel column.

From an examination of the registration report of 1850, it appears that out of 16,606 deaths there were 18 under the heading of Bright's disease, a ratio of 1.1 to total mortality per 1000; from dropsy 416 deaths were recorded, a ratio to total mortality per 1000 of 25. In the years following the number of deaths in the first class has rapidly and steadily grown, reaching in 1886 a total of 1135 deaths, a ratio to total mortality per 1000 of 30.5; while the deaths from dropsy have as steadily and almost as rapidly decreased from a ratio of 25 per 1000 to 5.9 per 1000. If we now add the deaths from kidney

diseases to the deaths from dropsy, we obtain a ratio to total mortality per 1000, beginning in 1850 with 26.1, and ending with 36.4 in 1886.

MORTALITY FROM BRIGHT'S DISEASE, NEPHRITIS AND OTHER KIDNEY DISEASES, AND FROM DROPSY, AND RATIOS TO TOTAL MORTALITY.

YEAR.	Total Mortality.	Deaths from Bright's Disease, Nephritis and other Kidney Diseases.	Ratio to Total Mortality per 1,000.	Deaths from Dropsy.	Ratio to Total Mortality per 1,000.	TOTAL.	Ratio to Total Mortality per 1,000.
1850..	16,606	18	1.1	416	25.0	434	26.1
1851..	18,934	27	1.4	390	20.6	417	22.0
1852..	18,482	32	1.7	415	22.6	447	24.3
1853..	20,301	35	1.7	405	20.0	440	21.6
1854..	21,414	38	1.8	424	20.1	462	21.6
1855..	20,785	56	2.7	501	24.1	557	26.8
1856..	20,734	51	2.5	487	23.4	538	25.9
1857..	21,220	45	2.1	512	24.1	557	26.2
1858..	20,776	42	2.0	421	20.2	463	22.2
1859..	20,776	56	2.7	522	24.9	578	27.6
1860..	23,068	67	2.9	470	20.4	537	23.3
1861..	24,085	91	3.7	440	18.3	531	22.0
1862..	24,974	96	4.2	467	20.3	563	24.5
1863..	27,751	111	4.0	535	19.2	646	23.2
1864..	28,723	130	4.5	502	17.5	632	22.0
1865..	26,152	173	6.6	442	16.8	615	23.4
1866..	23,637	135	5.7	462	19.5	597	25.2
1867..	22,772	161	7.1	421	18.5	582	25.6
1868..	25,603	206	8.0	470	18.4	676	26.4
1869..	26,044	210	9.2	428	17.6	638	26.8
1870..	27,329	286	10.5	451	17.9	737	26.8
1871..	27,943	370	13.2	527	19.9	897	32.1
1872..	35,019	376	10.7	618	17.6	994	28.3
1873..	33,912	460	13.5	545	16.1	1,005	29.6
1874..	31,887	463	14.5	469	14.7	932	29.2
1875..	34,978	509	14.5	474	13.6	983	28.1
1876..	33,186	488	14.7	445	13.4	933	28.1
1877..	31,342	535	17.1	412	13.1	947	30.2
1878..	31,303	615	19.6	370	11.8	985	31.4
1879..	34,801	692	21.8	380	11.9	1,073	33.7
1880..	35,292	698	19.7	271	7.7	969	27.4
1881..	39,458	825	22.6	292	8.0	1,117	30.6
1882..	36,785	877	23.8	313	8.5	1,190	32.3
1883..	37,748	959	25.4	296	7.8	1,255	33.2
1884..	36,090	1,000	27.0	234	6.3	1,234	33.3
1885..	38,094	1,088	28.6	244	6.4	1,332	35.0
1886..	37,244	1,135	30.5	219	5.9	1,354	36.4

An increase startling enough to attract attention and require investigation, but still not of the alarming character attached to the apparently overwhelming increase of Bright's disease and the kindred affections.

We have no evidence in Massachusetts that any of the substances as used for the preservation or adulteration of food have a marked injurious effect upon the kidneys.

Another lesson may be extracted from these figures. It is this: that statistical nosologies, as well as laws for the protection of public health, are educational and founded upon the learning of experts, and will inevitably break down if they get too far in advance of the common knowledge.

The figures also show that, in a sufficiently extended series of years, an explanation of an apparent discrepancy may sometimes be discovered.

This hurried glance at the registration tables will have shown this, I think: that in all the preventable diseases there has been a steady reduction, most

marked in the case of small-pox—a disease that can only seriously affect a community through inexcusable neglect.

I will not weary the ears of this assembly by dilating upon a topic on which all health authorities are agreed: the necessity for compulsory vaccination and revaccination so long as the system is susceptible of the virus.

A single comparison will demonstrate the saving of life in consequence of better sanitary conditions established by the authority of a board of health.

Probably no single instance of surgical interference in a disease inevitably leading to early death has attracted more attention, has deserved more admiration, or has added so many years to human life as the operation of ovariectomy.

The largest number of deaths in any one year in Massachusetts from ovarian dropsy was 51. We will assume that all of these lives might have been saved by ovariectomy.

Let me take now the city of Somerville, a suburb of Boston, with 29,971 inhabitants by census of 1885, with natural conditions of soil of varied character—partly favorable, partly unfavorable; with a mixed population almost wholly occupied with business, the trades and day labor. It has had an energetic and intelligent Board of Health, who have used the large powers conferred by our statutes wisely. They have a system of compulsory notification of the communicable diseases, rigidly enforced; they practice, so far as possible, isolation and disinfection. During their active administration and almost wholly in consequence of it, as I believe, the death-rate of the city has been reduced as follows: The Board of Health entered upon its work in 1878.

In 1875, a census year, the death-rate was 22.86; in 1880, 17.1; in 1885, also a census year, 16.63.

The improvements are more marked even when certain districts of the city are separately examined.

But this examination is scarcely necessary to prove that the interference of a public health authority, by such sanitary regulations as we can now enforce, has saved more lives in a community of 30,000 people, in a single year, than could have been restored to health, in this same period, in a State of nearly 2,000,000 persons, by an operation justly regarded as one of the greatest triumphs of surgery.

It may be objected that, with all this apparent diminution in the mortality from selected diseases, there has still been no reduction in the general death-rate; so far, at least, as the figures of the report are to be taken as evidence.

It is unfortunately true that our reports, in the earlier years, had a less degree of accuracy than they now have; that deaths were not so generally reported then as now. The records of the year 1855 were carefully examined for the purpose of determining the completeness of the enumeration of the deaths in that year. It was estimated by a competent authority, as the result of the examination, that not far from 16 per cent. of the deaths in that year escaped registration.

It is now believed confidently that this deficiency does not exceed 2 per cent., and the registration by

means of burial permits has been made much more certain.

Apart from fluctuations in the returns of deaths to the registration offices, there are reasons for believing that some of the conditions are not now so favorable to health as they have been. The proportion of the population engaged in factories has steadily and rapidly increased. Larger numbers of the people, absolutely and relatively, live in cities, subject to the unsanitary influences that prevail there.

In 1875, 63 per cent. of the inhabitants of the State lived in cities and towns of more than 5,000 inhabitants. In 1885 the proportion had risen to 73 per cent. There has also been a large addition to the native and therefore harder population, of immigrants from foreign countries, whose adaptability to our climate and conditions of life is still uncertain.

Too great expectations seem to have been raised, also, by the very brilliant results of sanitary works in the older countries. Men had to deal there with all the evils incident to sanitary neglect that had lasted for centuries, and in great cities at that. Here, on the other hand, the cities have contained a relatively smaller part of the population, and there has not been the same opportunity given for obtaining a result so striking as the reduction in the death-rate of London, for instance, from the high figures at the beginning of the century to those of to-day when she is the healthiest very large city in the world.

It may be of interest, in this connection, to call your attention to some of the diseases which have attracted general attention, perhaps excited more interest in the public than all other causes of death combined.

In forty-five years and eight months ending December 31, 1886, there appear to have been registered 1,163,571 deaths.

Small-pox has killed 5,572 in this period and has given rise to more legislation than any other single disease, and is the one most easily controlled. One provision of law is the beginning and end of its regulation—and that is compulsory vaccination and revaccination.

Scarlatina has destroyed 37,666 lives, permanently impaired the value of a large but unknown number, and the attempt to prevent it by sanitary regulation belongs to recent years.

Typhoid fever has been fatal to 45,871 human beings, generally in the prime of life. With an origin almost always in fecal pollution, it becomes epidemic whenever that pollution reaches a water supply or food, especially milk. The general conditions which sustain this disease in its endemic form and favor its epidemic spread are the same which produce general unhealthiness.

It has been well said that an epidemic of typhoid fever is a sanitary crime and should be punished as such. But the peculiar history of this disease has had but little influence on legislation in this country.

Epidemic cholera, the most persuasive apostle of sanitation that has been permitted to land on these shores, has destroyed from 1832 to this year not more than 2,000 lives. In no one year, excepting 1840, the year of greatest prevalence, has it proved so fatal

as scarlet fever, croup, typhoid fever, dysentery, pneumonia, whooping-cough, cancer or apoplexy; and even in 1849 the deaths from cholera did not vary much from the quarter part only of those from consumption.

Hydrophobia is represented by 72 deaths. More than half of these occurred in the four years 1876-79. There has been no death from it since 1881.

Thirteen deaths from yellow fever have not been considered of enough consequence to be given a place in the general summary. They occurred at the quarantine station in Boston and did not, perhaps, recall to any public health officer's mind the fact that about the beginning of this century yellow fever had in more than one year been a pestilence in the city itself.

Our experience in State preventive medicine has proved this: that while great good can be done to any community by the establishment of a board of health, whose functions are largely those of instruction and advice, it is certain that, sooner or later, the people will place in the hands of those capable of exercising such powers the machinery for making that advice effectual. And this has happened with regard to every subject which has been successively made an object of inquiry. There is now ample authority for the control of public water supplies and systems of sewerage; sufficient legislation to punish and prevent the adulteration of food and drugs.

One of the most encouraging signs is the more intelligent view taken by the public of the questions to which self-interest seeks to attach a sanitary significance.

Perhaps the much-vexed question of oleomargarine may be taken as an instance of this. We have in this substance a legitimate commercial product which, when properly manufactured, is a safe and useful addition to our food supply. It can be so made and is so made. When sold as natural butter it becomes an impudent fraud and should be punished as such. But it is no more a matter of concern to sanitarians than the proper making of butter itself is, and some of our legislative bodies appear to so regard it.

It has been well said by one of the most eminent of the executive officers of health, Dr. Russell, of Glasgow, that "nothing is more conspicuous than the helplessness of the individual under the conditions of civilized life to secure the physical basis of health."

How can any single individual in a crowded city make any successful effort to improve, or even to ascertain the quality of the public water supply upon which he is exclusively dependent? What can he do to secure a sufficiently prompt and safe removal of the waste materials of his daily life? How can he analyze the ingeniously sophisticated articles of food or medicine which may represent the ingenious employment of all the scientific skill that selfish capital can purchase? How vain it would be for him to attempt to prevent the crowding of the city, or the contamination of the air which he is obliged to breathe. Lastly, how can he recognize the presence of communicable disease, and recognizing, keep it at a distance?

There is no help but in cooperation on the most extended scale possible, individual, municipal, State and National. The individual must be compelled to give up his liberty to injure his neighbor. The great city must be restrained from converting the stream that flows past it into a sewer that shall poison the small villages that cluster about its banks lower down in its course. The country farmhouse must no longer, when a case of enteric fever occurs there, be a menace to the water that supplies a thousand city houses. No State should permit its own causes of disease, whatever they are, persons or things, to be transported into another State, nor pollute the common water supply. Lastly, the General Government should take cognizance of those causes of disease which can be controlled by no other power, or which are so general that the responsibility for them is National, or so overwhelming in their ravages that smaller political bodies have lost the power, if not the will, to protect the people.

Voluntary association on the part of persons, towns, States, or Nations even, will never establish a sufficient safeguard when one dishonest or ignorant associate has it in his power to nullify all the effects of a neighbor's spirit of self-sacrifice and restraint.

Epidemic disease is an evil that cannot be left to work out its own cure; it widens its circle too rapidly, and the time is long past when any quarantine, using the word in its older sense, would be sufficient to restrain a pestilence within the limits of the district whose sanitary crimes might have fairly deserved some punishment.

How, then, shall we organize for the protection of the public health?

For the individual, that he may not injure his neighbor through his own ignorance or that of his adviser, let the State give him some assurance that the legally used title of physician designates a person sufficiently qualified to give advice for the prevention and cure of disease—and a certainty, also, that the quack who steals the title shall be punished.

Establish, by direct provision of State law, local health authorities for each well-defined unit in our various forms of local government: village, town, city or county. Place in the hands of these authorities the execution of the laws of the State and all local ordinances and regulations pertaining to the public health, impress upon them the duties of watching all those conditions which immediately affect the health of the people; water supply, sewerage, sanitary condition of school-houses and scholars, factories, tenement houses and the markets, periodic inspection of the inhabitants to prevent the neglect of vaccination; house to house inspection at least annually. In brief, they should have all the powers which society assumes for protecting the public health.

To meet the possibility that some districts may not have intelligence enough to appreciate, or that powerful commercial or other interests may interfere with, these laws, there should be a State authority with ample powers.

This would be called upon for the purpose of harmonizing the action of the various local boards, where the interests of various localities were involved. It

should have coordinate power with all local boards in cases of communicable disease, in order that its action may be prompt and salutary. It should be enabled to carry on scientific investigations as to the causes of disease, to suppress noxious and offensive trades, as it will often happen that some great industry will possess in a community an influence sufficient to control the local board of health. This condition did in fact exist in Massachusetts, and no action of our State Board of Health in its earlier years was more heartily commended than that which transformed a town pestilential and disgusting from some fifty slaughter-houses into an attractive suburb of Boston. The business of slaughtering and rendering is now, in consequence of the action of the Board, carried on in an abattoir entirely without offense.

This authority should also have the supervision of the laws for the prevention of the adulteration of food and drugs.

It should have the general oversight of the public water supplies.

It should have charge of the registration of vital statistics, and of the investigations of the diseases of animals so far as they affect the health of man.

The educational element should be always present in the work of the State and local boards of health; and as in all other affairs of life the value of the lesson will stand generally in direct relation to the cost of it. The person who receives the benefit of a sanitary improvement should pay, if able to do so, a part, at least, of the cost, and should never be permitted to lose a sense of the obligation of preventing the spread to his neighbor of unsanitary conditions of his own making.

All the arguments that have been used for the existence of State health authorities are also available, it seems to me, for the creation and support of some organization for the protection of the public health in connection with the general government. I think that the medical profession is agreed, that no power less than that of the National Government will be sufficient to prevent the introduction of disease from abroad, or control its transport from State to State. There is, of course, a question as to what form that central authority should take and how extensive should be its power.

The well being of the country, to use the language of the Constitution, should imply that we must know all that can be known about those diseases and causes of disease which may affect the whole country.

Although the actual epidemic prevalence of disease of grave and frequently fatal character may be limited to certain districts; still the disturbance of commerce and the ordinary relations of life will extend to large sections of the whole country. Therefore the National health authority should have the power and the means necessary for a thorough investigation of the communicable and epidemic diseases and of the best means of preventing their spread. These investigations need not be limited to this country; in fact, it is quite evident that several of the most important diseases of this class must be also studied outside of the country, yellow fever, for instance.

The General Government should also make avail-

able for use in all parts of the land, the information from foreign countries, as to the prevalence there of contagious and epidemic diseases. Not simply such communications as may be made by consular officers; for these as a whole have probably no great scientific value; but that great mass of information which through one channel or another reaches Washington.

To this should be added the statistics of mortality and disease already published by very many boards of health throughout the land, and not now readily available for use, except by difficult and tedious search through many documents accessible to few.

In connection with this statistical work would naturally be associated some arrangement for the prompt receipt of information from all sections of the existence of dangerous communicable diseases; for the purpose of warning from a central office all interested communities. A voluntary system of notification, established by the National Conference of the State boards of health, has proved of much service, notwithstanding the fact that some of the great States have abstained from giving this information in a useful manner. But the usefulness of this method of communication has been seriously limited by the want of a central office with comparatively simple system for sending prompt advice in any required direction.

Not the least of the very many claims of the National Board of Health upon the medical profession was its attempt to secure uniform systems of registration and vital statistics, and a nosology adapted to the changed views now entertained as to the nature of many diseases. This work should be taken up again and carried on, if necessary, by liberal appropriations for the purpose of encouraging and assisting everywhere a continuous registration of vital statistics in suitable manner.

Dr. Billings, the wise and experienced officer in charge of the Mortality and Vital Statistics of the 10th Census, says:

"But, as the United States has no system of registration of vital statistics, such as is relied upon by all other civilized nations, for the purpose of ascertaining the actual movement of population, our census affords the only opportunity of obtaining even an approximate estimate of birth and death rates of much the larger part of the country, which is entirely unprovided with any satisfactory system of State and municipal registration; and the data which the census gives, imperfect as they are, are the only ones by which we can compare the healthfulness of this with that of other countries, or can ascertain, even approximately, the relative salubrity, or liability to particular forms of disease, of different parts of our own territory." And again, "Nothing pays better than good book-keeping in national affairs, and in no part of a nation's work is good book-keeping more useful than in keeping records of the life and health of its people."

The most troublesome point in the whole enquiry remains. How far should the General Government enter into the management of quarantine?

Though I come from a State which has never asked the assistance of the authorities at Washington dur-

ing any pestilence within her own border, and is not likely to do so in the future, and is at the same time fortunate enough not to have felt for three-quarters of a century the terrors of the pestilence which has wrought such havoc in other States. With all this I say, that it seems to me the duty of the whole country, through the national authorities, to assist those communities which are too weak to help themselves, and to undertake the health functions of local government for those too ignorant to know their remedies.

A satisfactory settlement of the question as to the power to be bestowed on the national authority depends, it seems to me, very much upon the form of the organization. If that of a board should be selected with an adequate representation of the separate States, there would then seem to be no serious objection to the bestowal upon this board of a direct control of quarantine. The points in dispute between the General Government and the States would appear to be safe in the hands of a board of national authority and directly representative of the States. It is quite probable that such a board would be cumbersome in form and not altogether easy to control—which is far from being an unmixed evil—but there are many contrivances by which a large board can delegate its powers to an executive committee during the intervals between the general meetings—meetings which need not be frequent. I can easily see, however, that this question is one for the law-maker rather than our profession.

The only alternative seems to be a single officer at the head of a bureau in connection with some one of the departments at Washington. An officer not charged with great executive powers, who shall have, so far as it is possible, unlimited authority to investigate, by himself or by competent experts, the questions which directly relate to protective medicine. He should be at the head of all the current medical statistical work of the Government, with the exception of that of the public services. He should be in constant and harmonious relations with the scattered health authorities of the land and should be permitted to cooperate with them in sanitary work. He should be subjected to the distractions of no other service—neither of the Army, of the Navy, nor of the Marine Hospital Service. The vast dimensions to which State medicine has already grown, the apparently unlimited field for future extension, make it evident that nothing less than all the thought and all the working hours of the best man are not too much to be devoted to the supervision alone of the investigations which ought to be made not in one year of epidemic panic, but through all years.

The very manifest advantage to this officer of a board of advice could and would in the very nature of things, be afforded by some representative of the State boards of health, quite similar, perhaps, to that now existing in the National Conference of State Boards. The need of early and confidential intercourse with these intelligent, active and responsible bodies would suggest itself at once to the sagacity of any man who would be likely to hold this important office.

I believe that both the Department of Agriculture and the Bureau of Education have from time to time called to their aid representatives of the agricultural and educational interests of the whole country.

Of the sanitary investigations carried on by the authorities at Washington, with the exception of those under the direction of the National Board of Health, it is not possible to speak with much satisfaction. Not that the scientific men who conducted them were not entirely competent; it would have been difficult to have found men as well qualified as many of them have been. But it was very difficult in a year of health to secure the necessary action authorizing investigations of diseases that might at any time enter our country, and there is every probability that it will be equally difficult to secure the means of continuing the work.

Dr. Shakspeare was sent abroad, in 1885, to make investigations of Asiatic cholera, then raging in Southern Europe. Beyond a few brief notices in the medical journals, one State board of health at least knows nothing, through any official information through any department at Washington, of the results of the enquiry. As the board of Health alluded to is charged with the coordinate responsibility of watching the second largest port of entry in the Union—which has a more frequent communication with cholera infected ports than any other, except New York, the failure to communicate valuable knowledge is inexcusable.

Again, in 1885, at the Washington meeting of the American Public Health Association, as well as at the meeting of the National Conference of Boards of Health, measures were taken for bringing to the attention of Congress some of the alleged facts in regard to the preventive inoculations in yellow fever practice in Mexico, by Carmona, in Brazil, by Freire. Congress was requested to appoint a committee of experts to visit these countries and ascertain the truth of the statements made. Notwithstanding the apparent willingness of the authorities to grant the petition, the inevitable delay attendant upon National legislation prevented action until the summer of 1887, when the appointment of a single expert was authorized. The President, with great promptness, appointed an expert of the best qualifications—and Dr. Sternberg made a journey to Brazil, and subsequently to Mexico. The year does not appear to have been so favorable for his purpose of studying the subject during the general prevalence of the disease as one of the preceding years would have been. Nor under his rigidly drawn instructions does he seem to have had all the advantages that would have accrued to an investigation less controlled by precise orders.

Unfortunately, the evidence submitted by Drs. Carmona and Freire appears to have been entirely insufficient to justify the claims made by them of the discovery of the yellow fever germ, nor has a prophylaxis of yellow fever by their inoculations been yet demonstrated.

It is a disappointment that we have not reached the result, that seems only just beyond our grasp; these claims, however, had been advanced so confidently by men holding honorable positions; inocula-

tions had been made on so extensive a scale, that a formal examination had become a necessity. Dr. Sternberg's investigations are worth all the money that has been spent upon them. The way has been cleared for an exhaustive examination of this most virulent of important pests; an inquiry that should have no limit of time, short of the discovery of a sufficient cause, and if possible, of a preventive; even if an expenditure of money be required, only less than the number of dollars that inadequately measure the country's losses and sufferings under this scourge.

It would be a satisfaction to all of us, I am sure, if Dr. Sternberg is enabled to complete the work so faithfully and intelligently prosecuted from the Havana investigation of 1879 to the present day.

But it must be regarded as a misfortune that scientific work of this sort should not be continuous, and free from the irksome burden of limited time and meagre appropriations.

I approach the conclusion of this possibly wearisome repetition of common-places with some hesitation, for I wish to say a few words about the National Board of Health, still by Act of Congress in legal existence, by neglect of Congress in a state of hopeless lethargy. This Board entered upon its work with every promise of success—the members of it were the best our profession could offer—the contributions to public hygiene, both by the services of its members and the labors of its experts, have their due and honored place among the records of such work the world over.

It demonstrated for the first time in this country, I venture to say, that local, State and National health authorities could profitably and harmoniously unite in suppressing an epidemic of yellow fever, and preventing its spread from State to State; and that, under the influence of an impartially vigilant sanitary inspection and treatment, trade and commerce need not materially suffer. Yet all this has not saved it from practical extinction. Mistakes were probably committed, but they are trivial as compared to the merits of the Board. I feel forced, for my own part, to the conclusion that its organic form—quite distinct from that of a body of such powers with which I am acquainted, and unlike anything in our own National Government—must explain the failure to survive the unjustifiable attacks made upon it.

The presence upon the board, of representatives of the Army Navy and Marine Hospital Service, however conspicuous may have been the attainments of their respective representatives, was not advantageous. They represented interests which ordinarily are of far less consequence than those of New York, Chicago, New Orleans, or San Francisco.

It would not be possible, I think, to select seven men—that being the number of the appointed members of the Board—who should adequately represent the various divisions of the country. The States are not accustomed to a representation at the hands of other States, and the State not directly represented will find it difficult to understand the principle of selection.

The great States of Ohio and Pennsylvania have

not been directly represented on the existing Board.

Is it well to wait until a new outbreak of yellow fever, or the landing of cholera gives us legislation founded only in the weakness of fear?

I cannot but think that it is better to have the substance of things whether it comes in the form of Bureau of Health or Board of Health; provided only that some of the great resources of the Nation shall be turned to the protection of that property which is at least as valuable as the cotton fabrics of a Massachusetts mill or the wool of Ohio sheep. I mean the protection of that greatest property of all—human life.

ORIGINAL ARTICLES.

CASES OF IDIOPATHIC ANÆMIA.

Read before the Medical Society of the District of Columbia, February 8, 1888.

BY ROBERT T. EDES, M.D.,
OF WASHINGTON, D. C.

I do not intend here to give a systematic history of this interesting class of cases, but only to call attention to some of the prominent points illustrated by some which have fallen under my own observation. A very complete and lucid account of the general subject is to be found in the article by Dr. Osler in "Pepper's System," vol. iii. It is necessary, however, for the sake of clearness, to mention the more characteristic and diagnostic points which justify us in giving to a case of anæmia the designation of idiopathic, essential, or progressive pernicious. The latter adjectives are only applicable to a part of the cases which are properly classed together by every characteristic except a fatal termination, and it is not justifiable, certainly until the nature of a disease is better known than that of the one under consideration, to incorporate in its name a prognosis which is not an invariable one.

The first of these points is the intensity of the anæmia; often, and, indeed, frequently, without emaciation, or at any rate with a degree of emaciation which does not correspond in degree to the anæmia. The color of the skin in cases of this kind, owing to the fat which is still retained under it, is yellow and waxy rather than white, as it is more likely to be in the forms of anæmia depending on malnutrition, and might sometimes suggest jaundice, but does not, of course, extend to the conjunctiva.

The count of the blood corpuscles is low, lower even than the amount of coloring matter would indicate, presenting in this respect a marked contrast to the anæmia of chlorosis. It not infrequently, even in cubic millimetre, falls below 1,000,000 to the cubic millimetre, the normal being in the neighborhood of 5,000,000 for men and 4,500,000 for women.

The proportionate color of the blood (hæmoglobin) may be a little greater, so that the individual corpuscle is even a little richer in hæmoglobin than normal. In chlorosis, on the other hand, the hæmo-

globin contents of the blood are much more diminished in proportion, and the individual corpuscle is much less colored than it should be.

A few weeks ago I counted the corpuscles of a chlorotic young woman and found but little diminution of the count below normal, while the color test (which has been several times repeated with the same result) gave only about one-third of the normal.

The shape of the corpuscles is irregular. They become swollen, more nearly spheres than discs, and sometimes look like a foot-ball partly blown up, or they are elongated and assume the shape of a pear, a battledore, or a snow-shoe, or they have tails. This is more obvious in a fresh than in the dried specimen. In size also they vary within wider limits than the normal, and there are found very large and very small individuals (megalocytes and microcytes).

The specimens I show here were kindly photographed for me from a dried specimen of the blood of the last case I shall report, by Dr. Gray, of the Army Medical Museum. I show a photograph of normal blood by way of comparison. Some other less important and less constant changes are sometimes observed. The proportion of white corpuscles is not materially changed.

While the irregularity of shape would of itself, in a case of which nothing else was known, be sufficient to raise a suspicion of idiopathic anæmia, yet it is not quite certain that severe anæmia of other forms may not produce them. I have myself seen in other cases alteration in the shape of the corpuscles, not equalling in degree, but resembling, that of the form now under consideration.

So much for the form of anæmia. The next point is that there is no discoverable adequate cause for the condition; and here, of course, comes the opportunity for many difficulties and errors in diagnosis. It is obvious that many obscure diseases attended by a secondary loss of corpuscles and color may, before their true nature is discovered, be considered idiopathic anæmia. Abdominal cancer, not yet evident to the touch or not giving rise to distinct local symptoms, is one of the conditions likely to be suspected among the first. Anæmia from hæmorrhage which the patient does not think of sufficient consequence to mention, chlorosis, the various obscure diseases connected with changes in the spleen, lymphatic glands or suprarenal capsules, may counterfeit it more or less closely. A case in which idiopathic anæmia was among the conditions suspected, but which was found at the autopsy to be one of chronic pancreatitis, was reported in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for December 24, 1887.

The difficulty is not lessened when, as not infrequently happens, there are slight symptoms pointing in some other direction, as will be seen in two of the following cases, where it would have been difficult, in the absence of a microscopic examination of the blood, to say that the anæmic appearance of the patients was not due in one case to an interstitial nephritis, and in the other to a chronic diarrhoea.

If we adopt the most alarming nomenclature and the prognostic views associated with it, the recovery

of the patient may be a fortunate but confusing element in the diagnosis.

The details of symptomatology I do not propose to describe. I will only mention, as of especial importance, digestive disturbances, great weakness, dyspnoea on exertion, and various hemorrhages, including cerebral and retinal, the latter of which may have considerable diagnostic significance.

The most noteworthy recent contribution to our knowledge of this affection has been the observation, now many times repeated, that in a certain number of cases marked atrophy of the stomach tubules co-exists with the anæmia. The temptation is naturally strong to attribute the anæmia to lack of nutrition. It is, however, not yet certain that the atrophy is not simply a part of a general degeneration, and dependent on, rather than causing, the diminished nutritive power of the blood.

The gastric symptoms, though present in these cases, are not so marked as we should expect to find in a case which is to end in so excessive a degree of anæmia. They are not by any means so severe as we may meet with in cancer or ulcer of the stomach, and yet the failure in the nutrition of the blood is much greater.

If it can be shown that, in a certain proportion of cases, gastric atrophy distinctly precedes the development of an extreme anæmia having the features of the form we are describing, it seems to me we can no longer call it "idiopathic or essential," for the cause is an adequate one, and we can only say that certain kinds of gastric (and perhaps further investigation may show, intestinal) atrophy, give rise to a set of symptoms closely resembling those which occur in other cases in which no such lesion can be found. It is to these cases that the adjectives "progressive pernicious" most strictly apply.

In another set, intestinal parasites, especially tæniæ, have been found, but not frequently enough to establish a rule, or to do more than make it desirable, in forming a diagnosis, to exclude this possible condition; which, however, has not, so far as I am aware, been noticed in this country. Neither are we afflicted with the *achylostoma* duodenale which, among the workmen in some of the tunnels under the Alps, have been found to be the cause of a severe form of anæmia.

As regards etiology I can only say that in none of the cases I have to report has either of the most common causes been present. These are the puerperal condition or severe mental shock.

CASES.

I. An old soldier of characteristic appearance, with a blood count below 1,000,000, but 40 per cent. of hemoglobin, had a slightly enlarged spleen for a time; but it soon disappeared from touch. This might have been considered a case of leucocythæmia had the blood not been examined and found not to contain any excess of white corpuscles in proportion to the red. His appetite was good and his digestion fair. He was soon lost sight of, but I have little doubt that his life was not long.

II. A young man, who had previously considered himself healthy and strong, noticed a loss of color in

his face and soon began to have headache, dizziness, and noises in his ears. When seen he appeared muscular, not emaciated, but his skin was almost yellow and his mucous membrane nearly white. He expressed himself as feeling strong, and was not sure that he could not lift a barrel of sugar out of a wagon as he had been in the habit of doing; although, half an hour previously, he had nearly fainted on walking from the ward to the lecture-room.

There were a good many purpuric spots on his body, and also retinal hemorrhages.

A blood count gave less than 670,000 red corpuscles to the cubic millimetre, but there was not so much change in shape and size as sometimes seen. The further progress of the case was unfortunately simple and uninfluenced by treatment. He steadily and rapidly lost strength, becoming so weak that he could hardly move in bed without danger of fainting. Delirium, diarrhoea, great dyspnoea on exertion preceded the fatal termination, which took place about seven weeks after he first felt himself sick. The autopsy revealed extreme anæmia without great emaciation; there were ecchymoses in various organs. There was granulo-fatty degeneration of the heart and kidneys, and there were opaque yellow patches in the stomach which may have been fatty, but of which there is no record of a microscopic examination. There certainly was not any well-marked atrophy of the mucous membrane. The aorta was of somewhat smaller calibre than usual, and its walls thin. The marrow of the femur was in places red and jelly-like, and contained, in addition to the usual constituents, a few nucleated red corpuscles. The marrow of the sternum was of a reddish-yellow color, but was not examined microscopically.

This was as typical a case of the "progressive pernicious" form as one often sees, and yet both symptoms and lesions remove it clearly from the class of those dependent (if any are) upon gastric atrophy; although it is by no means improbable that, had the patient lived some weeks longer, such an atrophy, consequent upon fatty deneneration of the glandular elements, might have followed.

III. A middle-aged woman was seen in consultation, presenting the characteristic external appearances. The blood was pale, but the corpuscles were not counted; as, not knowing the sort of case I was going to see, I had not provided myself with the necessary apparatus. They were, however, irregular in shape and size. Nothing else could be found by physical examination. She died in about ten days. In this case there had been no pregnancy for some years and no mental shock.

IV. The next case, more chronic in its course, was that of a college professor 57 years of age. There had been a good deal of trouble in his family in the way of sickness and sudden death, but hardly anything that could be called a shock.

His general appearance was sallow; his face and hands brown, partly at least from exposure, his legs yellow. His wife had noticed the dark color. He complained chiefly of weakness, so that going up a slight elevation distressed him, and of oppression or sinking across the chest and in the epigastrium.

Pulse 100 to 108. His mind was clear. There was only slight and occasional digestive disturbance. Nothing was to be found by the usual physical examination except a soft systolic souffle along the left edge of the sternum.

The blood was not examined, partly because I had not prepared myself with the apparatus, but chiefly because my mind was occupied by a diagnosis which turned out to be erroneous. This was Addison's disease. The diagnosis of his attending physician, a man of wide experience and learning, rather inclined to abdominal cancer.

After some weeks, during which I did not see him again, he died, and there were found fatty changes in various organs and red marrow in the bones. There were no changes of the suprarenal capsules.

V. A man, æt. about 55, had been sick three years with anemia without known cause, had recovered under the use of arsenic, again had the same trouble and again partial recovery.

When seen, in June, he had been failing since December or January. He was very pale, his face a little bloated. Nothing was to be got by physical examination except a tender spot at the epigastrium and one lower down. There was no jaundice, no hematemesis and no polyuria. It was supposed that there had been some fat in the stools. The blood corpuscles were irregular in size and shape. The diagnosis was idiopathic anemia with a possibility of cancer about the head of the pancreas.

The autopsy, at which I was not present, showed the muscles to be dark-red, but the other tissues blanched. The stomach was thin and pale; the pylorus and duodenum contracted to about one-third the ordinary size; small intestine pale but healthy. Pancreas normal; mesenteric glands somewhat enlarged. There may have been some increase in the connective tissue of the kidneys. Unfortunately, there was no microscopic examination of the stomach or of the marrow of the bones.

An examination of the gastric tubules would have been highly satisfactory, but there seems good reason to suppose, from the gross appearances, that this was one of the cases of atrophy of which several have been minutely described.

VI. A ship carpenter æt. 41, a man of large frame, not fat but by no means emaciated, had not been well for two years. Complexion pale and yellowish. He complains of weakness, headache, and dyspnea on exertion, and loss of appetite. His sight is dim and he is somewhat deaf. Slight cough without expectoration, pain in the lumbar region. He has had a little œdema of the feet and ankles. The urine shows some traces of nephritis, which disappeared in a few days. The improvement in this respect, it should be noted, took place before his general condition was much better.

The diagnosis might easily have been made of a moderate nephritis in the way of recovery, had not the condition of the blood, both as indicated by his complexion and the count, been entirely out of proportion to the amount of nephritis. The character of the corpuscles was of the usual kind, they varying both in size and shape, while the successive counts were as follows:

May 20, 780,000; May 27, 735,000; May 31, 955,000; June 7, 1,290,000; June 14, 2,036,000; June 24, 2,695,000.

This is one of the cases where uncertainty in diagnosis arises from recovery. Soon after this last count the patient eloped from the hospital and continued well enough to elude my search as, although I got distant tidings of him as being pretty well, he evidently thought I wanted him for some legal rather than scientific purpose. At an early period of his sickness, after about a fortnight of very careful feeding, rendered necessary by his deficient nutrition, being, in fact, partly by the rectum, he made an unauthorized meal of ham and eggs without harm, which seems a valuable piece of negative evidence as regards any atrophy of the stomach. The treatment, in addition to the diet, consisted in arsenic in the form of Fowler's solution.

VII. D. C. P., a young man, with chronic diarrhoea, anæmic, very weak, pale and listless. The diarrhoea improved and disappeared under the use of large mildly astringent enemata.

Examinations of his blood were as follows:

Oct. 14, 763,000. No excess of white. A good many of small diameter. A good many pointed and tailed. Oct. 21, 1,019,000. Oct. 31, 1,877,000. Nov. 5, 1,665,000. Nov. 10, 2,178,000. Nov. 15, 2,438,000. Dec. 10, coloring matter about 50 per cent. of the normal. Dec. 13. Discharged, gaining in flesh, strength and blood. Went to Florida.

VIII. A man æt. 71, of active habits, had not been well for two years except during a visit to California the previous winter. He was seen on January 13, 1887. Last September he noticed shortness of breath on exertion, his feet and legs felt cold. Six weeks ago, on going out into the street, felt a sudden weakness of the legs and was obliged to return, which he did with much difficulty, being hardly able to get up the doorsteps. When I saw him he was in bed, though he was able to stand up for a part of the examination. He complained chiefly of coldness and stiffness of the legs, as well as of weakness but of no pain there. There was considerable pain about the rectum which turned out to be largely due to his over anxiety on the subject of his bowels and consequent over treatment. It soon ceased to give him further trouble. A sensation of constriction or pressure across the lower part of the bowels was a constant accompaniment of the case and seemed to have little or nothing to do with any condition of constipation or otherwise.

With the history of his sudden attack and the peculiar sensations and weakness in his legs my attention, like that of his family and his former attendants, was naturally directed toward any evidence of spinal disease. The limbs could be moved freely in any desired direction as he lay in bed. The muscles were flabby and small but not decidedly atrophied and reacted well to the faradic current. Sensation was everywhere present, and both superficial and deep reflexes were of nearly normal intensity. He could stand with his eyes shut.

Examination of the urine, rectum, and the fundus of the eye gave negative results.

There was a systolic murmur at the base of the heart transmitted toward the right, and some prolongation of respiration over the whole chest, but no distinct râles. I should have said that there was considerable expectoration of thick mucus. A count of the blood a week after my first visit gave 1,575,000 to the cubic millimeter with many of the corpuscles irregular and small. My diagnosis excluded any distinct organic spinal disease, as hæmorrhage, softening, or inflammation, or the systematized sclerosis, and attributed the abnormal sensations and the pseudo-paralysis to anæmia of the cord as a part of a general condition. I was not able for some time to rid myself of the suspicion of malignant disease of the vertebrae, or of some abdominal organs, but repeated physical examinations with negative results, and the absence of any new symptoms pointing to such growth, together with the positive results of an inspection of the blood, left no alternative open but idiopathic anæmia. Whether the feeling of tightness across the lower part of the abdomen was simply an abnormal sensation like the rest I could not be sure, but it certainly was not due to any distension or growth.

The dependence of a well-marked paraparesis upon a general anæmia is a phenomenon of sufficient interest to justify a digression. Anæmia and hyperæmia of the spinal cord, from the very nature of the case, and in fact much like the corresponding conditions in the brain, have been the subject of many more suppositions (most of them reasonable it is true) than of direct observation.

Localized anæmias of the spinal cord may be produced by obstruction of the aorta or by embolism of the spinal arteries. A theory has also been held that in some of the so-called reflex paralyses a spasm of the vessels cuts off the blood supply from more or less limited areas of the cord. With these, however, we are not at present dealing.

The existence of a paraplegia dependent, not upon a local anæmia, but upon a general one is, however, admitted, though certainly not at all common in a well marked form. Cases of paraplegia after severe puerperal hæmorrhage, such as have been a large proportion of those reported, cannot be regarded as quite so conclusive in this way, since other puerperal processes like septicæmia and thrombosis may complicate the matter, but undoubtedly a part of them are of this character. There have been, however, others where large hæmorrhages from the bowels have been followed by a temporary paraplegia, and one where such a paraplegia consequent upon uterine hæmorrhage and in process of recovery, underwent two exacerbations on renewal of the hæmorrhage. Another case occurred after profuse epistaxis.

Last winter I saw with my friend Dr. Bates, of the Navy, a case of this kind, a young man under the care of your Secretary, Dr. Adams, who intends to report in full. He had suddenly lost the power in his legs. His history at first would have led one to suppose that the sudden paralysis was the beginning of his illness, and naturally enough to think of hæmorrhage into the cord or its membranes or a very rapid myelitis, but it appeared on further inquiry that he

had been having frequent and profuse hæmorrhages from the rectum for a long time previous, but had kept about his usual work until this attack. When I saw him there were no disorders of sensation, his reflexes were normal, and voluntary motion of every kind was present though not very strong. The hæmorrhage, which came from a small vessel an inch or two above the anus, was being treated by Dr. Adams with the result of a complete restoration of the functions of the spinal cord.

It is not difficult to explain why deficient supply of nutriment should affect the spinal cord sufficiently to cause a loss of function, but it is not so clear why the cessation of function should come on so suddenly when the condition that causes it must be gradual in its development; nor why it should be confined to the lower segment of the cord when the anæmia is general.

We can find analogies, if not an explanation, for the first difficulty, as for instance, in fatty degeneration of the heart which certainly must be developed very slowly but which kills very rapidly. The nervous centres of the heart pushed to the full extent of their failing powers break down under a sudden increased demand. The last straw breaks the camel's back. As to the second, there may be some conditions of the circulation which render the effects of a general anæmia more perceptible in the lower part of the cord, or, what is more probable, that the lumbar enlargement is sooner exhausted because more usually called upon for a constant expenditure of energy than that portion which supplies the arms. It is often noticed in animals coming under the influence of a paralyzing poison that they continue to drag themselves around by the fore paws when the hind legs no longer support them.

Hilton Fagge says he knows of no case where anæmic paraplegia has been reported in connection with pernicious anæmia, but the fact of his making the remark shows that this sagacious observer recognized the possibility of such a connection.

The further progress of the case is briefly told. Careful feeding and the use of tonics, especially arsenic and strychnine, improved the nutrition. The patient gained a little flesh and a little strength. His blood counts went from the original count, on Jan. 21, 1,575,000; Jan. 28, 1,425,000; Feb. 26, 1,620,000; March 27, 1,850,500; April 19, 2,060,000; May 23, 2,250,000; June 13, 2,540,000; coloring matter 70 per cent. By this time he had gained considerable flesh and some strength, was eating, enjoying and digesting, a very good variety of solid food. It was noticed soon after this that the patella reflex was wanting, but there were no other symptoms of increasing paralysis. There was a good deal of stiffness and some pain about the hips and the hands, and one episode of constipation and irritative diarrhœa relieved by a dose or two of castor oil. The question of his going away to avoid the hot weather was discussed, but he preferred not to give up the comforts of home until he felt stronger, and during the extremely hot weather of last July he contracted an enteritis from which he rapidly sank.

The only notable point in the treatment, not al-

ready mentioned, was the use of inhalations of oxygen for some weeks, but so far as the patient or I could see, it did no good.

MEDICAL PROGRESS.

SURGICAL INTERVENTION IN AFFECTIONS OF THE KIDNEY.—A. BRODEUR has published a work entitled "*De l'Intervention Chirurgicale dans les Affections du Rein*" (published by G. Steinheil, Paris, 1886) in which he examines 327 operations on the kidneys.

Of the 327 operations 212 were performed on females, 94 on males, with 15 children, and 6 cases in which the sex is not given. In 136 cases the right, and in 105 cases the left kidney was concerned. In 86 cases the side is not mentioned. Of the 327 operations there were 235 nephrectomies: 125 lumbar with 62.4 per cent. of recoveries, and 110 abdominal with 50 per cent. of recoveries. There were 43 nephrotomies: 34 lumbar with 67.64 per cent. of recoveries, and 9 abdominal with 77.77 per cent. of cures, 39 nephrolithotomies: 36 lumbar with 77.77 per cent. cures, and 3 abdominal, all of which died. Ten lumbar operations for nephrorrhaphy, with 90 per cent. of recoveries. Thus, of the 327 operations 200, 61.16 per cent., were followed by recovery. In 1885 S. W. Gross recorded 233 collected cases of operation on the kidneys, with a mortality of 44.6 per cent., including 93 nephrotomies with 23.1 per cent. mortality. In a later communication he gives a collection of 17 nephrorrhaphies with only one death.

The indications for the different surgical operations on the kidneys, as given by Brodeur, may be thus summarized:

In wandering kidney which causes severe symptoms, nephrorrhaphy should first be tried after the failure of other measures, and if this be unsuccessful nephrectomy should be done.

In hydronephrosis which calls for operative treatment, and in suppuration of the contents, Brodeur recommends nephrectomy. Should a fistula remain, a nephrectomy may be done later under favorable circumstances.

In simple congenital or acquired cysts of the kidneys, including echinococci cysts, the author advises against nephrectomy, and holds that nephrotomy only is allowable.

In carcinoma of the kidney Brodeur believes that, on account of the heretofore very unfavorable results, the surgeon should not proceed to a radical operation without careful examination of the other kidney, whilst for sarcoma of the kidney, he strongly advises extirpation, as well as in cases of benign renal tumors. In small, painless, and otherwise not troublesome benign renal tumors the surgeon should at first abstain from any operation.

In severe confusion of the kidney the author adopts Simon's rules: In uncontrollable hemorrhage, ligature of the vessels and resection of the

kidney; in beginning suppuration, nephrotomy. It is also advisable to remove the organ in prolapse with threatened gangrene.

In renal and ureteral fistulæ which cause much trouble to the patient, nephrectomy can seldom be avoided.

In renal calculus nephrolithotomy by lumbar incision is most advisable; more so than depriving the patient of a kidney by a dangerous operation. In pyelo-nephritis due to concretions, on account of the comparative frequency of affection of both kidneys nephrotomy or nephrolithotomy is preferable to nephrectomy. For the same reason nephrotomy is to be preferred in suppurative pyelo-nephritis following diseases of the urinary passages, prostate, etc.

Tuberculous pyelo-nephritis should scarcely be subjected to surgical interference at its beginning. In further advanced tuberculosis of the kidney, suppuration, caseous degeneration, perinephric abscesses, etc., nephrectomy seems to give better results than simple incision of the kidney and removal of the caseous mass.—*Centralt. für Chirurgie*, No. 20, 1887.

LARYNGEAL PHTHISIS TREATED BY LACTIC ACID AND IODOFORM.—DR. LUC has obtained successful results by the treatment of tuberculous ulceration of the larynx with lactic acid and iodoform, recommended by M. Krause, of Berlin, and M. Heryng, of Warsaw, in the case of a young woman suffering from laryngeal tuberculosis. The patient was weak and thin; the least fatigue produced dyspnoea, and, aggravated the wheezing from which she constantly suffered. At night there was fever followed by profuse perspiration. The voice was completely lost. The patient coughed incessantly, and the sputa contained numerous bacilli. There was dulness, with moist râles at the apex of the left lung. The epiglottis was but slightly affected. The vocal cords were red and swollen, and could not be completely adducted; this was apparently due to infiltration of the mucous membrane covering the arytenoid cartilages, which was studded with excrescences which were especially prominent in the glottis. The appetite was poor. The patient complained of intense pain in the larynx when she coughed or spoke. A few days' rest was prescribed, during which medicinal inhalations were administered. The larynx was anesthetized by means of a 1 in 5 solution of hydrochlorate of cocaine applied with a brush. The arytenoid excrescences were destroyed by galvanocautery. At the end of a fortnight the eschars came away. The infiltration of the mucous membrane was considerably reduced. The membrane presented a granulating surface of healthier appearance. The vocal cords were more easily brought together, and the voice was much stronger. During six months the larynx was constantly painted with a 50 per cent. solution of lactic acid. Powdered iodoform was insufflated after each application of the acid. Under this treatment the patient recovered her voice. The stridor and laryngeal pain disappeared; expectoration diminished; nocturnal coughing ceased. Dr. Heryng, who examined the patient

after this treatment, regarded the laryngeal lesions as completely healed. This method had no effect on the general tuberculous symptoms.—*L'Union Méd.*, Feb. 16, 1888.

INDICATIONS AND METHOD OF PERINEOPLASTY.—O. KÜSTNER attempts to show that every old perineal rupture, even the smallest, should be healed by perineoplasty, as even small cicatrices of perineal tears cause trouble. Besides the troubles caused by prolapse of the vagina and retroflexions, must also be considered neuralgic symptoms, pruritus, intertrigo, and pains in the cicatrix during coition and defecation, as well as nervous symptoms, often of a severe nature, and severe pains in consequence of stretching or tearing of old parametric adhesions by the vaginal prolapse.

Küstner compares the different operations for incomplete perineal rupture. He distinguishes between the double-pointed operation of Hewitt, Freund, Martin and Bischoff, and the bilateral-symmetrical operation (Simon-Hegar, Winckel). By the first the perineum is rendered most resistant. He thinks that the median rupture should be operated on by the bilateral-symmetrical, the typical forked tear by the other method. For complete rupture Küstner regards the double-pointed method as the only natural one.

In regard to the technique of the operation, the first care must be given to an antiseptic method of freshening and to an antiseptic suture material. For the latter he recommends silver wire and silk-worm gut, as they do not act as drains. The sutures should be so placed that there is no dead space. It is best to embrace from the vagina about $\frac{2}{3}$, and from the rectum about $\frac{1}{3}$ of the depth of the recto-vaginal septum. Vaginal and rectal syringings after the operation are injurious. In 36 operations he has used a 20 per cent. solution of cocaine for anesthesia, 20 times with good, and 8 times with perfect results. The flaps are made with a half-dull scalpel. The two points are united by a continuous suture, and button sutures are placed in the vestibule, rectum, and on the perineum. The patients are kept quiet for 14 days. Küstner thinks that by this method the cures should be 99 or 100 per cent.—*Centralbl. für Chirurgie*, No. 25, 1887.

OCCCLUSION OF LARGE ARTERIES BY FLAT LIGATURES.—The London correspondent of the *Philadelphia Medical Times* mention three cases reported to the Clinical Society of London, going to show that it is unnecessary, and inadvisable to rupture the coats of a large artery when applying a ligature in its continuity. In one case the superficial femoral artery was thus occluded for popliteal aneurism; kangaroo-tendon was used, and drawn tight round the artery in a clove-hitch without rupturing the coats; pulsation in the tumor was arrested immediately and did not return. The patient, a woman, æt. 45, made an uninterrupted and perfect recovery, but was kept in bed for seventy-two days. In the second case reported to the meeting, secondary hæmorrhage had occurred after amputation at the hip-joint, for sar-

coma of the femur. As it was thought that it would have been fatal to the patient to have opened up the flaps to search for the bleeding vessels, and as pressure on the common femoral controlled the hæmorrhage, a clove-hitch was put around that artery. No return of hæmorrhage took place, and the patient made a good recovery. MR. PITTS, who performed the operation, justified his departure from established practice by asserting that the old fear of hæmorrhage at the seat of ligature was not felt by a surgeon who placed a flat ligature on the vessels and did not divide the coats, but merely closed the lumen of the vessel.

MILK JELLY AND MILK POWDER.—The *American Druggist*, for April, 1888, gives the following directions for preparing these milk foods:

As a variation in milk diet, the following is recommended by Professor Liebreich:

Heat one quart of milk with one pound of sugar, and when the sugar is dissolved continue the heat, at a boiling temperature, for about ten minutes. Now cool it well, and then add, *slowly* stirring, a solution of 1 ounce of gelatine in a cupful of water. Next add the juice of three or four lemons and three wine-glassfuls of wine, brandy, or other liquor. Set the glasses containing the mixture in a cold place, so that the contents may gelatinize. It is necessary to have the milk quite cold before the other ingredients are added, as it would otherwise curdle.

Dried milk, in the form of powder, may be prepared by evaporating skimmed milk in a suitable apparatus, preferably in vacuo and under continued stirring, at a temperature of 66° to 70° C. (140° to 158° F.) to a syrupy consistence, then mixing it with 30 to 50 per cent. of its weight of finely powdered sugar, and continuing the heat, with constant stirring, between 30° and 55° C. (86° and 131° F.) until the product has assumed a dry, granular condition.

ERGOT IN SUBINVOLUTION.—Some very interesting observations were recently made by DR. EMILE BLANC on the effect of ergot in involution of the uterus after labor. A fairly large number of women who had gone through normal labor were divided into three categories. Forty of them were left to Nature; forty were treated with daily hypodermic injections of Yvon's solution of ergotine (1 cc. = 1 gram of ergot) during the first five days after delivery; and the remaining twelve were similarly treated for ten days. Daily external measurements were then made in all the cases to ascertain the size of the uterus, and on the fifth and tenth days its internal measurement was taken by means of the uterine sound. It was found that the administration of ergot during the first five or ten days failed to produce any favorable effect in hastening the process of involution, but that, on the contrary, it seemed to delay the normal retraction of the uterus. Ergot is nevertheless an exceedingly useful agent in the treatment of secondary hæmorrhage, and its action is more marked the less the interval of time that has elapsed since the confinement.—*British Medical Journal*, May 5, 1888.

A NEW METHOD FOR SUPPLYING THE GALVANIC CURRENT FOR MEDICAL USE.—CARPENTER, of Cleveland, describes his method of procuring the galvanic current for office use, as follows:

The device to which we have the pleasure of calling the attention of the profession consists simply in that of using the current of the incandescent lighting system direct from the street-wire passing the door—Thompson-Houston or Edison. We have the wires of the former system placed in our office, and by means of a rheostat resistance sufficient to reduce the current to a minimum is interposed, then by the use of an ordinary switch-board, the current is increased or diminished according as resistance is cut in or out. A milliampère meter is made use of whereby the current is accurately measured while the patient is in the circuit.

The device is absolutely safe, as the entire voltage of the wire can be handled without the rheostat being used. My wire furnishes a very smooth continuous or galvanic current, with an electromotive force of 110 volts with a maximum strength of $\frac{1}{10}$ of an ampère, equal to about eighty Leclanché cells. This current is constant, does not vary in voltage, and is always ready, night or day, as the main line from which my connections are made is used for commercial purposes, and furnishes lighting for basements, dark shops, and rooms. This, I am informed, is the case in all large and in many small cities, so that little trouble will be met with in securing a wire with a day current. When a wire is once placed in our office, the task of caring for a battery of cells is at an end, and we have an apparatus that is at once always ready, reliable, economical, cleanly, and durable. The rapid introduction of the incandescent lighting system, together with the great increase in the use of this form of light, will place within the reach of very many physicians this current of electrolytic work.

The charge for the annual rental of the wire is \$10, not including the cost of putting in, which, if the main line passes the door, should not exceed \$5. This device, as will be seen, does away with cells entirely, as well as the time, trouble, and expense of keeping them in order, and I venture to express, as my opinion, that we have a current superior to any that it is possible to have generated from chemical action, besides economy of room, which is not a small item in cramped quarters.

A word regarding the danger from contact with the electric-light wire. The Thompson-Houston or the Edison incandescent system of an electromotive force of 110 volts, and of a strength of $\frac{1}{10}$ of an ampère, is harmless, and must not be confounded with the arc system of Brush and others, as the strength of the latter is six amperes, and of course dangerous and must never be used.—*Medical Record*, March 31, 1888.

THE ANTISEPTIC METHOD OF TREATING BURNS AND SCALDS.—PROF. S. W. GROSS, of Philadelphia, suggests the following as by far the most efficient and painless method of managing burns and scalds. It is that practiced by Mosestig-Moorhof, and it is the one invariably employed by Prof. Gross. The vesicles

having been opened and excised, the entire burned surface is smoothly covered with dry compresses of 20 per cent. iodoform gauze, over which gutta-percha tissue is placed. The whole is then surrounded by a thick layer of sterilized absorbent cotton between layers of corrosive gauze, which is secured by a roller with a moderate degree of pressure. Such a dressing rapidly relieves pain, prevents contact of air and infection by septic pus, and by its infrequency keeps the part at rest. It should be allowed to remain from seven to fourteen days. In burns of the second degree, one dressing suffices. In the worst burns, there is relatively little suppuration, and the eschars thrown off are aseptic. For burns of the face, iodoform ointment (1 part iodoform, vaseline 20 parts), is used, and covered with a gutta-percha tissue mask. The ointment should be removed daily.—*Practice*, April 15, 1888.

NOVEL METHOD OF APPLYING TAXIS.—MR. G. JAMESON, of Calcutta, writes:

A few days ago a native presented himself at the dispensary with a right large scrotal hernia, which had been down for some months. The man was placed on his back, and the tumor manipulated. The coverings were fairly tense. Before attempting reduction I casually asked the patient if the tumor ever got smaller? He replied "Yes," and proceeded to give me a demonstration in taxis which I had not previously heard of, and which will probably be new to many readers of the *Journal*. Lifting up the tumor with his left hand, he placed his right thigh on his abdomen, then crossed it over to the left side, catching the tumor between the pubes and thigh, then applying pressure. The hernia disappeared with a gurgle and a snap before I had time to call the attention of the students to this novel procedure. The reduction was complete.—*British Medical Journal*, April 28, 1888.

TREATMENT OF TYPHOID FEVER BY STROPHANTHUS HISPIDUS.—DR. POULET reports three cases of typhoid fever treated by means of strophanthus. The results obtained were "magical," and he knows of no remedy which can compare with strophanthus in the treatment of this disease. As an antithermic its effects are certain and persistent, and are not accompanied by any depression. It appears to hasten the period of defervescence and effectually controls the tendency to hæmorrhage. He recommends that it should be given early in the attack.—*London Medical Recorder*, April 20, 1888.

CHLORATE OF CALCIUM IN ECZEMA.—LIER gives the following formula for the use of chlorate of calcium in eczema:

Ung. zinc.....	20 parts.
Talci.....	"
Ol. cadini.....	5 "
Aq. dest.....	10 "
Calci chlorat.....	2 "

This paste has been found especially useful in chronic, obstinate eczema.—*Monatshfte für Praktische Dermatologie*, No. 8, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MAY 26, 1888.

WHAT IS THE PROPER MODE OF LIMITING
THE NUMBER OF MEDICAL COLLEGES
AND OF MEDICAL MEN?

Perhaps on no other subject is there greater unanimity of opinion among members of the medical profession, than that we have in this country too many medical colleges from which are annually graduated a number of students largely in excess of the legitimate needs of the people, and thereby productive of all the evils of an overcrowded profession. As was fully shown in the Address of the President of the American Medical Association, DR. GARNETT, published in THE JOURNAL, for May 12, 1888, with a population of 60,000,000 in the United States of America, we have 89 regular medical colleges, giving instruction to 9,591 students and graduating 3,209 each year, while the total number of practitioners is equal to 1 for every 380 inhabitants.

It is also shown that the increase in the number of medical colleges and medical graduates has been more rapid than the increase in population. This is correctly attributed, chiefly to the popular desire on the part of our young men to leave the agricultural, mechanical and mercantile avocations for the professions, and the absence of all proper barriers in the form of adequate standards of preparatory general education before entering upon professional study, and of sufficient direct professional attainments to justify their entering upon the practical duties before them.

The evils of an overcrowded profession and their chief causes are thus admitted by all who have given attention to the subject; but concerning the appro-

priate and practicable remedies there is much greater diversity of opinion. Some who appear to believe in the absolute paternity of governments would have either the National or State legislative bodies liberally endow, and at the same time arbitrarily limit the number of the medical colleges. These evidently overlook the fact that all legislative bodies in this country are composed of individuals who depend upon the votes of all classes of the people for their official positions, and a majority of whom are as poorly qualified to create and maintain a just, stable and efficient system of professional schools as are the majority of the voters who elevated them to office, and who at the next election may relegate them to private life and put a disciple of Christian Science or of the faith-cure in their places.

A much larger number appears to have full confidence in the sovereign power of resolutions. These would make us think that all the evils under consideration only need discussion at the annual meeting of the American Medical Association and the adoption by that body of resolutions solemnly declaring that no more medical colleges should be organized, and that existing ones should faithfully exact of every student before admission a thorough general education, a long period of medical college study, and the highest order of medical attainments before graduation, and the work would be done. We confess to having had some such faith in the efficacy of resolutions fifty years since. But after seeing that great National medical organization devote annually a fair share of its time to hearing able reports, earnest discussions, and the adoption and re-adoption of resolutions covering the whole subject of medical education for the first twenty years of its existence, without apparently making any material change in either the number or curriculum of the colleges, our faith in mere resolutions began to weaken; and we aided in doing just what Dr. Garnett recommends in the second "proposition" stated in his Address. It was during the annual meeting of 1866, that the Association, wearied with the ever recurring discussion, referred the subject of medical education to the faculties of the schools, accompanied by an earnest recommendation that they hold a separate convention of delegates from all the medical colleges of this country during the week preceding the next annual meeting of the Association, which was to be in Cincinnati, May, 1867. The recommendation was accepted and a majority of the medical colleges then existing, accordingly sent delegates to the College Convention that assembled in the Medical College of Ohio, May 3, 1867. Professor Alfred Stillé, of the University of

Pennsylvania, was made President, and Professor G. C. E. Weber, of Cleveland, Secretary. Three days were devoted to a faithful consideration of the important topics before them, resulting in the adoption of a most admirable scheme of medical college education, by a unanimous vote. Its chief features were briefly stated by the *Medical Record*, of New York, as follows: "First, a positive standard of preliminary education; secondly, a longer time in which to acquire a knowledge of the various branches of medical science and practice; thirdly, a systematic and successive order of studies for the student; and lastly, a certain amount of direct clinical instruction in a public hospital as part of the senior course."

The action of the convention was reported to the annual meeting of the Association then in session in the same city, and received the unanimous approval of that body; and may be found in full in the *Transactions*, Vol. 18, pp. 371-384, 1867. After the scheme thus carefully devised and doubly recommended had been before the faculties of all the medical colleges for two years, another convention was assembled in Washington, May, 1869, which was presided over by the late Professor S. D. Gross, which simply endorsed fully the action of the first convention; and yet the colleges continued in the old beaten path as though a convention had never been held, and three-fourths of them are there still, as shown by the statistics admirably presented in President Garnett's address.

If a new convention were assembled and another scheme devised and even unanimously recommended, who would enforce it? We have recalled these early and persistent efforts of the Association not for the purpose of claiming that they were useless because the schemes and resolutions did not enforce themselves or command obedience—for they have been of great service both in developing a correct public sentiment and correcting errors—but to remind the younger and more enthusiastic members of the profession of the ground already gone over, that they may avoid repetitions and be more readily induced to concentrate their efforts in a direction much more likely to reach practical and permanent results, as we shall endeavor to show at another time.

PUERPERAL INFECTION IN THE COURTS.

At a recent meeting of the Chicago Medico-Legal Society,¹ a suggestive paper was read on the "Medico-legal Aspect of Utterances made in Medical Societies." The writer selected, as his chief illustration

of too positive opinions, expressed in medical debates, certain sentences from discussions of the Semmelweis theory of puerperal fever that were held a short time ago before the Chicago Gynecological Society. He spoke with lively feeling of the legal responsibility thrown upon the practitioner by the general acceptance of this doctrine. His skeptical allusion to the view of the identity of puerperal fever with puerperal infection constitute an anachronism, melancholy rather than curious or interesting, as clearly pointed out by more than one of the debaters. Examples of individual doubt and uncertainty of course need not concern us. The pathology of puerperal fever in its general outlines has long been definitely settled, and we can neither add to nor take from that which was authoritatively determined before the professional existence of most of the participants in the discussion just mentioned.

But the question of the legal responsibility of the attendants in the event of fatal puerperal fever, incidentally brought out in the paper, is of practical moment and worthy of more than passing notice. As at present informed, the exact limits of accountability before the law of the obstetrician under these conditions have never been finally decided in this or any other land. Indeed, in America, suits of alleged malpractice on this ground are so rare that almost no legal precedents can be regarded as established. The notion of professional loyalty, after all, is very clearly defined in the medical mind with us in the United States. It is seldom merely a sentiment. In the majority of cases, fealty to the profession is looked on in the light of a stern duty. This fact becomes more apparent in courts of law than in the sick-room. "From time immemorial," an able writer² remarks, "the theoretical course has been to express differences of opinion with all consideration in the presence of the colleague, and then to support him and to strengthen his position with the patient and his friends." Unhappily, this state of affairs is not always observed in the consultation chamber, as most of us can bear witness. But let a brother practitioner be summoned to appear in the courts upon a charge of malpractice, and the profession is at once up in arms; the error is now apt to lie in the direction of the opposite extreme. Exaggerated conceptions of fidelity to the common faith, possibly, also, the apathy, if not the active hostility of the public, sometimes induce the conscientious practitioner to condone an unpardonable sin against the laws of the art and science of medicine.

In this connection, it is of interest to note the

¹ JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 3 and 12, 1866, 501.

² The Lancet, May 5, 1888, p. 887.

views of Professor Heinrich Fritsch³ respecting puerperal infection *in foro*. Fritsch propounds the question, identical with that suggested to the Medico-Legal Society. He writes: "A question that the judge addresses to the expert is the following: 'Do the operations or the omissions of the midwife stand in causal relation to the death of this puerpera?'" This question cannot be answered simply by "yes" or "no." At most, only the scientific conviction can be expressed that a causal nexus does exist. But the expert is never in a position to swear that except for the operations or the omissions of the midwife, the life of the puerpera would without doubt have been preserved. Fatal peritonitis may occur in consequence of the rupture of a pyosalpinx during the course of an otherwise normal labor; the possibility of purely accidental infection, in which the midwife plays no part, must be admitted.

The modality of the infection must be clearly established before the causal nexus can be looked upon as demonstrated. To establish the modality of infection, three data are to be supplied:

1. The source of the material of infection must be made clear.
2. The omission of disinfection must be demonstrated.
3. Any cause of death other than the puerperal disease must be eliminated.

In establishing the first point it is not necessary to demonstrate infection with puerperal poison only. A midwife was convicted who was suffering from an inflammation of the lachrymal sac. It was shown that contrary to the physician's orders she had attended women in labor without disinfection of her hands, and that during the confinements she had compressed the tear-sac with her fingers and immediately afterward introduced them into the parturient canal. American readers will recall the sad case of Dr. Rutter and his *ozæna*.

The omission of disinfection is not difficult to determine. Although, of course, the painful, rigorous antisepsis of Lister may not be insisted upon. In case of alleged disinfection the fact of such preparation at the bedside must be attested by competent witnesses.

The third point is elicited from the history of the case, the observation of the course of the disease, and the results of the autopsy.

In the concrete case of fatal puerperal fever, therefore, when the source of infection, the omission of disinfection, and the absence of any other cause of death than puerperal fever have been demonstrated,

it is consistent with all the facts that there is a causal nexus between the operations and omissions of the midwife and the death of the puerpera.

It is evident that the general behavior of the midwife can have no influence upon the question of her guilt or innocence, but it ought to be considered in relation to the degree of her punishment.

Fleischmann⁴ reports a clear case of puerperal infection by a midwife who had recently been in attendance upon a fatal case of puerperal fever. In urging the importance, in Austria, of stricter laws in the prevention of this disease, he quotes the wise provisions of Saxony—also of interest to us as germane to the subject under discussion.

The ordinance of March 28, 1885, in Saxony, is as follows:

"§17. When a lying-in woman delivered by a midwife becomes the subject of puerperal fever, the midwife is not permitted to attend the sick woman any longer. Neither can another midwife undertake the further care of the woman sick with puerperal fever.

"The midwife is not permitted to undertake the management of another case of labor within a period of five days, or even longer, reckoned by the district-physician from the day of her last visit to the sick woman."

Desirable, even urgently necessary as such laws certainly are, it is utopian to anticipate their enactment with us for many years to come. Little by little, however, the professional mind is becoming saturated with the notion of asepsis in the practice of midwifery, and we may confidently look forward to the ultimate realization of our hopes, even though it be in the "dim and distant future" of which Mr. Gladstone speaks.

Meanwhile, we venture to express the conviction that Fritsch's opinion upon the medico-legal aspect of puerperal infection will meet with general commendation. Certainly, it is a model of wisdom and moderation.

ABOUT THE SIZE OF A BEAN.

"A Puzzled Englishman" complains, in the *Philadelphia Medical Times*, of the loose statements in English and American medical literature as to the size of pathological objects. Such time-honored statements as "as about the size of a fetal head," or "about the size of a millet seed," he thinks we can never hope to be rid of before the millenium. On one occasion his interest in a case was kept until it was stated (by the American writer) that something was

³ Deutsche Medicinische Wochenschrift, Nr. 12, 1888, p. 228.

⁴ Wiener Medizinische Wochenschrift, No. 13, 1888, p. 427.

"about the size of a dollar," when, inasmuch as he had seen only a gold dollar, his interest suddenly flagged. Again he was lost when he read that a tumor was "about the size of a doughnut." Doubtless most American physicians have been equally puzzled on reading that something was about the size of shilling or a half-crown.

Such unscientific comparisons are far too common in medical literature. We have often wondered if all the tumors removed in France are "as large as a foetal head," and why those removed by German surgeons are uniformly either "as large as a fist," or "as large as a walnut."

How many of us have seen a millet seed, and how many have seen three foetal heads of the same size. Doughnuts, as most of us know, are not made of a uniform size. What are we to infer as to the situation of a tumor or an incision, when we read that it was a few inches or a few finger's-breadth to the left of the sternum? Is it not about time that we adopt a standard size for foetal heads, doughnuts, walnuts, hazel-nuts, and other standards of comparison, or else cease using such standards of comparison and begin to use such as scientific men everywhere can understand. Millimetres and centimetres are exact, and everyone knows what they are.

Would it not be well to have some uniform color standard? Such expressions as "café-au-lait," greenish yellow, etc., are often far too indefinite, *café-au-lait* being especially indefinite unless one be accustomed to the very best of coffee; the color of coffee and milk ranging from a very light brown or dark yellow to a dark reddish brown. Such indefinite expressions are very annoying to any one making or using color-tests in chemistry.

Another annoying method of indefinite expression is seen in the very loose statements of some writers concerning chemical compounds used. Such vague terms as "the oxide of mercury," or "the chloride of mercury" are unpardonable in a scientific communication, more especially when a chemical reaction is necessary. Too often, also, is there an ambiguity regarding the quantity of reagents to be used. Wendriner, for example, gives the following method for detecting antifebrin: When one adds a small quantity (how much, 2 or 10 grains?) of antifebrin to normal urine, then adds caustic soda (stick or solution, and how much?) so as to render the urine alkaline, and then distills, aniline is found in the liquid that has not passed off by distillation. The urine of patients taking antifebrin will not give this reaction. But this is due to the fact that the drug is decomposed in the organism. The urine, in this case

(which case?), distilled in the presence of an acid, gives a large quantity of phenol, of which traces only may be found in the urine of persons that have not taken antifebrin (*Nouveaux Rémèdes*). A good chemist would have no difficulty in making this test; but good chemists are rare in the medical profession.

It should be the object of every writer to make his language so plain that it cannot be misunderstood. In the medical profession a great deal of life—may depend upon what is written. Much has been said on the subject of writing prescriptions in Latin. When one is writing a prescription that is to be printed it is better to use Latin than to use a vulgar or local name of a drug. Continental writers are especially prone to use local and vulgar names for preparations of plants, or else to distort the Latin name so as to make it almost unrecognizable. In Italian, French and Spanish literature it is very rare to find a prescription written in Latin, and it not infrequently happens that one has to look through half a dozen dictionaries or pharmacopœias in order to make an intelligent translation of one word. Doubtless foreign readers have, to more or less extent, the same cause of complaint of English and American writers, though naturally we cannot see our faults so well as others can. But it is a singular fact that the writers of the Romance languages use the Latin less frequently, by far, than do the writers of any other modern languages. In one of Simon's prescriptions for laryngismus stridulus we find *eau de tilleul* called for. *Tilleul* means a lime-tree, a linden. Turning to this word in a medical dictionary, we are referred to *tilia*, and find that the flowers of *tilia Europæa* "have been supposed to possess anodyne and antispasmodic virtues." Under *tilia Americana* we find that "a mucilage, prepared by macerating the inner bark in cold water, has been applied in burns." Thus far we have no clue as to what *eau de tilleul* is. Again we find a prescription calling for *carbonato de litina*; we can only guess that carbonate of lithium is what is wanted, for the best Spanish dictionary does not give *litina*.

But there is certainly one thing for which our foreign confrères may justly complain of English and American writers: they still adhere to grains, scruples, drachms, and ounces, and to inches, and common and vulgar fractions.

By all means let us have the proposed international pharmacopœia.

THE NEXT INTERCOLONIAL MEDICAL CONGRESS OF AUSTRALIA will assemble on January 7, 1889, and will rise on January 12.

VOLUNTARY MUTILATION BY PERFORATION OF THE MEMBRANA TYMPANI.

DR. JUSTYN KARLINSKY reports three rare and curious cases of voluntary mutilation, observed by him in the Roumanian Army. In the first case examination showed traces of traumatic lesions in the internal auditory meatus; but the functional symptoms were not justified by any lesion of the membrana tympani, nor of remainder of the ear. Simulation was suspected; lesions of greater or less extent were found at each examination, and finally the head of a phosphorus match was found in the secretions. There was no perforation of the drum-head in this case. In the second case there was perforation, with subacute internal otitis, caused by the introduction of a piece of unslaked lime, which was then moistened. Fragments of the lime were found in the auditory canal. In the third case Karlinsky found a large perforation with everted edges, which had been produced by a curved piece of iron wire. The patient had been in the habit of using this wire as an ear-pick, and it was somewhat uncertain whether the perforation was intentional or not.

EDITORIAL NOTES.

EPITHELIOMA OF THE CLITORIS.—It is well known that primary epithelioma of the vulva is a very rare disease. Richet recently operated upon a case at l'Hôtel-Dieu, and subsequently presented the case at a clinic. The patient was 40 years of age, had always had good health, her brothers and sisters were in good health, and her mother died at 90 years. The patient became pregnant when 23 years old, and was delivered of a dead child after having had a fall. Six months before entering the hospital she noticed a tumor on one labium majus, as she thought, but examination showed that on the lower part of the mons veneris was a tumor as large as a hen's egg, reddish, and with the well-known cauliflower arrangement of its lobes. The point of origin of the tumor was really the clitoris. Microscopic examination after removal of the tumor showed that it was an epithelioma.

ATOMICITY AND BIOLOGICAL ACTION.—M. J. BLAKE has recently reported to the Académie des Sciences the results of a series of experiments on "The Relations between the Atomicity of the Inorganic Elements and their Biological Action." He claims that monatomic elements act on the pulmonary arteries; diatomic elements on the centres of vomiting and on the voluntary and cardiac muscles, except glucinum, which acts on the other nerve centres. The triatomic

elements act on the respiratory, vaso-motor, and inhibitory centres, on the cardiac ganglia, and on the pulmonary arteries; and the tetraatomic elements act on the respiratory and vaso-motor inhibitory centres of the cerebrum, on the spinal cord, the cardiac ganglia, and the pulmonary arteries.

COCAINE IN THE DIAGNOSIS OF LARYNGEAL DISEASE.—BAUMGARTEN, of Buda-Pest, has found a new use for cocaine, based on its action in blanching hyperæmic mucous surfaces, catarrhal surfaces, and healthy mucous membranes. If the paleness does not appear after several applications, Baumgarten concludes that it is not a case of hyperæmia, but a tuberculous or syphilitic process that is to be dealt with.

THE "TEXAS HEALTH JOURNAL," the first number of which has been received, for July, 1888, is a new 32 page journal of public health published at Dallas, Texas, under the editorship of Dr. J. R. Briggs.

THE ASSOCIATION OF REGISTERED MEDICAL PRACTITIONERS OF SOUTH AUSTRALIA was formed on April 3. Dr. Hayward, of Adelaide, is President, and Dr. A. A. Lendon, of Adelaide, Secretary.

DR. ENGELHARDT, of Halle, has been made Professor extraordinary of Gynecology in the University of Jena, in place of Küstner, who has gone to Dorpat.

DR. GARRÉ, formerly Privatdocent in Basle, is now an assistant in the surgical clinic and Docent of surgery in Tübingen.

SOCIETY PROCEEDINGS.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, March 23, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D., IN THE CHAIR.

THE PRESIDENT exhibited

TWO UTERI REMOVED PER VAGINAM FOR FIBRO-SARCOMA AND CARCINOMA RESPECTIVELY.

I have here two uteri which, as you see, are quite large to have been removed by the vaginal method. The first, which is the size and shape of a medium-sized orange, with the cervix hanging to it like a thickened stem, is a fibro-sarcoma. The entire organ is involved excepting a superficial layer of muscular tissue and peritoneum, and was ulcerated within so that the entire cavity was converted into a pus pocket. The uterus was curetted for fungosities 6½ years ago and 4½ years ago by an eminent obstetrician, 2

years ago by a prominent homeopath (for endometritis fungosa), and by myself four months ago. The patient is 47 years old, and has two children, one 28 years and the other 25 years old. The uterus is known to have been enlarged for 7 years. The chief symptoms have been metrorrhagia, muco-purulent, slightly offensive discharges and daily colicky pains.

The uterus was removed two months ago, and the patient, for the first time in years, feels perfectly well. I ligated the broad ligaments in the face of great difficulties. The right one was so much thickened (probably diseased) that it was practically inelastic, and was ligated *in situ*. The whole vagina was contracted like that of a virgin, and was so unyielding that it was lacerated slightly before it could be dilated sufficiently for work. The uterus, after having been cut loose, was delivered with great difficulty, and tore away some of the ligatures. Two compression forceps finally secured the bleeding points; they were left on for twenty-four hours. The iodoform tampon was removed at the end of week.

The other specimen is fully the size of a man's fist, and is an adenoma of the fundus and posterior wall which has undergone cancerous degeneration. The patient is 55 years old, anæmic, and has had several children, the youngest of whom is 17 years old. She ceased menstruating at 50 years, but soon after commenced to have a pinkish discharge, which has continued and increased ever since, and has lately been somewhat purulent and slightly offensive. She suffered with uterine cramps. On account of the size of the uterus I found it necessary to retrovert it in order to get at the upper portion of the broad ligaments. The operation was performed March 10th. Although pus escaped into the vagina from a rent made in the diseased posterior uterine wall by the tenaculum forceps used to aid in the retroversion, the recovery has been the same as after normal labor. The iodoform tampon was removed on the fifth day, and the first douche given.

DR. FRANKLIN H. MARTIN read a paper entitled
A REPORT OF FIFTEEN CASES OF FIBROID TUMORS OF
THE UTERUS TREATED BY GALVANISM.

(The report including only the year's work of 1887.)

From Jan. 1, 1887, to Jan. 1, 1888, I applied galvanism in strong, accurately measured and definitely concentrated doses in gynecological cases over 1,400 times. During this time I employed galvanism for uterine fibroids 623 times in 15 cases. The result was as follows:

Not suitable for treatment and recommended for operation, 1	
Benefited.....	4
Symptomatically cured.....	5
Absolutely cured.....	5

The author of the paper then selected and gave in detail the history and treatment of five cases, two of which were symptomatic cures, two actual cures, and the remaining case was benefited.

The following is a short sketch of each case:

Case 1.—Diagnosis: Large, painful, hæmorrhagic, interstitial, and subperitoneal fibroid tumor of the uterus, filling the pelvis and extending nearly to umbilicus.

Treatment: a large number of applications of galvanism given by three different methods of procedure, extending over a period of more than two years.

Result: benefited.

The above is a continuation of a history, cited as Case 10, in an article read by the author before the Section of Obstetrics and Diseases of Women, at the thirty-second annual meeting of the American Medical Association, at St. Louis, May 5, 1886.

Miss C., unmarried, age 26, consulted me on account of large abdominal tumor. Upon examination I found a large abdominal tumor attached, as I then thought, to the whole anterior wall of the uterus, crowding that organ away from the bladder. I have since ascertained that the portion previously diagnosed as the uterus is simply the cervix, the uterus being lost in the mass of the tumor, and its canal traversing its entire depth. The tumor was ovoid, smooth, and easily movable under the abdominal walls, about seven inches in its long, and six inches in its transverse diameters. The growth was increasing in size rapidly.

This patient then received in turn thorough trials of the iodine and glycerin treatments, ergotin treatment, and, as a last resort, surface applications of galvanism were made. This latter, thoroughly carried out, checked the growth, and markedly reduced the size of the tumor. This was found, however, to be of a temporary nature, the growth enlarging rapidly at all times except when under treatment. With an idea of getting more marked results, abdominal galvano-puncture was at last resorted to. In September, 1886, four operations were performed in intervals of ten days. The patient was anesthetized and a steel needle, four millimetres in diameter, with a trocar point, insulated with hard rubber, to within three centimetres of the point, attached to the negative pole of the battery, was thrust through the abdominal wall into the thickest portion of the tumor. A large animal membrane electrode was placed upon the abdomen in close proximity and attached to the positive pole of the battery. A current of 200 milliamperes was turned on and allowed to pass for fifteen minutes. The effect of these operations was a rapid diminution in the size of the tumor. The patient was advised to await further developments. At the end of two months she returned, stating that the growth of the tumor had recommenced, the hæmorrhage being excessive.

Dreading the necessary risk attendant upon abdominal puncture, and having at this time successfully treated a number of cases by Dr. Apostoli's method, I determined to adopt that safer and, in my opinion, much more effectual means in this case. Therefore, in January, 1887, regular treatment was instituted, consisting in the introduction of an intra-uterine platinum electrode to the bottom of the uterus, which was found at this time to measure eighteen and a half centimetres, or seven and a half inches in depth. To this electrode was attached the negative pole of the battery, and the circuit was completed by the use of the membranous abdominal electrode. Seven treatments were given by the 1st of February, when menstruation appeared. The first four of these

seven treatments were of the negative intra-uterine, the last three of the positive intra-uterine variety. The highest current borne by the patient was fifty milliamperes. The following menstruation was free from pain, but hæmorrhage was as excessive as ever. No change in tumor.

February. Four treatments were given in this month, all negative intra uterine, with no apparent result on tumor or amount of hæmorrhage at next menstruation. No pain at menstruation.

March. Two treatments, negative intra-uterine of about fifty milliamperes strength. The hæmorrhage at the next menstruation caused considerable exhaustion, but was accompanied with no pain, nor was there any change in the tumor.

April. Eight positive intra-uterine treatments were given, with a view of modifying, if possible, the excessive menstruation. The patient at this time was able to tolerate without discomfort a current of as high intensity as one hundred milliamperes. The hæmorrhage of the next menstruation was not materially decreased, the tumor showed signs of reduction—the uterus measuring sixteen centimetres. I was puzzled at this time to get some means of checking the exhaustive menorrhagia. I was convinced that the current tolerated was not sufficiently strong to produce the desired coagulating effect upon the whole surface of the endometrium in contact with the long internal platinum electrode. The current, in other words, was not concentrated enough at any one point of the electrode to produce its characteristic coagulating effect, sufficient to check hæmorrhage. I, therefore, modified Dr. Apostoli's method, by instituting a means of internal concentration. This was accomplished by devising my flexible internal electrode, with a given active surface, which, acting only on a comparatively small portion of the endometrium at one time, would enable me in several treatments to successively apply to the whole surface of the uterus a current of sufficient concentration to accomplish the desired results. The electrode adopted in this case was three millimetres in diameter, and had an active surface of four square centimetres, and the current used with this was at all times to be one hundred milliamperes, passing for five minutes.¹

May. Five positive intra-uterine treatments were given in this month with my new electrode. At the first application the active portion of the electrode, the distal end, was introduced to the bottom of the canal, a gauge on the staff of the sound marked the distance to which the instrument entered the womb. At the next treatment the gauge was placed so that the active portion of the electrode would just reach the point acted upon by the former treatment. The same principle was carried out until every portion of the canal had been operated upon by the concentrated current. Five treatments were given before the next menstruation. The effect was magical. The flow lasted but three days. No pain.

June. Four treatments early in month were given with the concentration electrode as the native pole. The patient at this time left city for three weeks.

July. Thirteen treatments were given, first six

negative, seven positive. Tumor decreasing in size. Depth of uterus fifteen centimetres. Menstruation lasts four days and is normal in quantity.

August. Five treatments, negative.

September. Six treatments, four negative and two positive. Measurement of abdomen was made at this time, and over the most prominent part of tumor was thirty-seven and a half inches.

October. Six treatments, all negative. Menstruation still remains scanty. Gain in flesh and improvement in general health.

November. Nine treatments, three before menstruation, and six following, all negative intra-uterine.

December. Five intra-uterine negative treatments.

Although there has been a general gain in flesh since last measurement made, the patient measures two inches less or thirty-five and a half inches. Depth of uterus fourteen centimetres or five and a half inches.

Thus this patient in one year has gained in flesh, in strength: has normal menstruation instead of menorrhagia, and is perfectly free from pain. The uterus has been reduced from seven to five and a half inches in depth, and the mass of the tumor is reduced fully one-third in size. Patient still under treatment.

Case 2.—Diagnosis: Myofibroma of the fundus of the uterus enlarging the whole organ.

Treatment: Thirty-two applications of galvanism. Result: Cure.

Mrs. D., æt. 24, married two years, wife of a mechanic, no children or miscarriages, presented herself for treatment March 23, 1887. Menstruation commenced at 14; at present irregular, and for five days excessive; is accompanied with headache, and is followed by severe neuralgic pains. Bowels constipated; hæmorrhoids; leucorrhœa, but not excessive; frequent and painful urination.

Objective symptoms: Vagina small. Cervix large and patulous. Uterus large with canal taking the direction parallel with the axis of the body, and measuring eleven centimetres or a trifle more than four inches in depth. I was assisted by Dr. Wunismark in the treatment of this patient.

Thirty-two applications were given this patient by means of the concentration electrodes with a current of one hundred milliamperes at each sitting.

The effect of the treatment was noticed in the behavior of the first menstruation, the flow having been modified in quantity and was without the slightest pain. The last treatment left the uterus seven centimetres in depth, normal in contour, with no evidence of a thickened fundus. The patient who had previously been anemic in appearance, is now full-blooded, in the best of health. Discharged cured.

Case 3.—Diagnosis: Painful, bleeding fibromyoma in anterior wall of uterus.

Treatment: Galvanism—thirty-nine treatments.

Result: Improvement in general health and reduction of the growth. Menorrhagia cured and pain at menstruation relieved.

Case 4.—Diagnosis: Large, painful, bleeding myofibroma of the uterus filling the pelvis and abdomen.

¹ See Medical Record, December 17, 1887.

Treatment: One hundred and fourteen applications of galvanism by Apostoli's method.

Result: Symptomatically cured, pain and menorrhagia relieved, tumor diminished in size, and patient restored to health.

Case 5.—Diagnosis: Large, painful hæmorrhagic, interstitial and subperitoneal fibroid growth of the uterus completely filling the pelvis and lower portion of the abdomen.

Treatment: Thirty-eight negative intra-uterine, galvanic applications and eleven positive intra-uterine by Apostoli's method.

Result: Tumor reduced one-third, hæmorrhage modified, pain relieved.

Case 6.—Diagnosis: Hæmorrhagic fibromyoma of posterior wall of fundus increasing uterus to ten centimetres in depth.

Treatment: Sixty-two applications of galvanism by Apostoli's method, by means of my flexible concentration electrodes.

Result: Growth absorbed, the uterus being reduced in depth to seven centimetres. Hæmorrhage relieved and patient completely restored to health.

Case 7.—Diagnosis: Large, painful hæmorrhagic myofibroma of the uterus filling pelvis and lower abdomen.

Treatment: Thirty applications of galvanism.

Result: Symptomatically cured. Uterus reduced in depth from nineteen centimetres to sixteen centimetres. Tumor markedly reduced. Menorrhagia cured and great improvement in flesh and strength accomplished.

Case 8.—Diagnosis: Myofibroma of the right horn of the uterus increasing the depth of the uterus to eight centimetres.

Symptoms: Excessive hæmorrhage, accompanied and followed by excruciating pain that remained for ten days following menstruation.

Treatment: Sixty-two applications of galvanism by Apostoli's method, modified by the use of my intra-uterine concentration electrodes.

Result: Cure.

Case 9.—Diagnosis: Large, interstitial, hæmorrhagic, painful fibroid growth extending to within two inches of the umbilicus and causing enlargement of the uterus.

Treatment: Thirty-seven intra-uterine galvanisms—twenty negative, seventeen positive.

Result: Reduction of growth fully one-third. But little relief of hæmorrhage or pain up to the present time.

Case 10.—Diagnosis: Large, subperitoneal fibroid growth, about eight inches in its long, and four in its shorter diameter, with irregular contour attached to the entire fundus and posterior wall of a slightly enlarged uterus.

Symptoms: Distressing pressure upon rectum, bladder, and general complaint of heaviness in pelvis with "bearing-down," and difficulty in locomotion. Menstruation profuse and painful. General health impaired.

Treatment: Thirty-five applications of galvanism.

Result: Symptomatic cure.

Case 11.—Diagnosis: Interstitial, painful hæmor-

rhagic myo fibroma of the anterior wall and fundus of the uterus increasing its depth to eight and one-half centimetres or three and one-half inches.

Treatment: Thirty intra-uterine applications of galvanism.

Result: Benefited. Depth of uterus reduced to two and one-half inches, general health improved, menorrhagia modified, and pain relieved.

Case 12.—Diagnosis: Large, hæmorrhagic, interstitial and subserous fibroid growth of the uterus increasing the depth of the organ to fifteen centimetres or nearly six inches.

Treatment: Twenty-one applications of galvanism by Apostoli's method as modified by myself.

Result: General health restored, hæmorrhage checked, pain and pressure in pelvis relieved, tumor reduced one-third, and depth of uterus decreased to thirteen centimetres. Patient still under treatment.

Case 13.—Diagnosis: Myo-fibroma of the anterior portion of the neck and body of the uterus, three inches in diameter. Uterus not materially changed in depth, three and one-quarter inches.

Symptoms: Menstruation profuse, but not excessive; much pain during latter part of flow. Frequent and difficult urination.

Treatment: Sixty-one applications of intra-uterine galvano-negative treatment by my modification of Apostoli's method. Result: Cure.

Case 14.—This case was found, after a few treatments had been given, not suitable for this method of procedure. A submucous mass from the interior of the fundus of the womb gradually filled the uterine cavity, and when I discovered it was pedunculated. I advised her to return to her home and have it removed by a surgical operation. The operation was successfully accomplished by Prof. Mann, of Buffalo, N. Y.

Case 15.—Diagnosis: myofibroma of fundus and posterior portion of uterus, accompanied with menorrhagia.

Treatment: twenty-three intra-uterine applications of galvanism by Apostoli's method as modified by me.

Result: cure.

DR. P. S. HAYES: The point has been well discussed and there can be little further said. It occurs to me, however, that there may be a reason why the positive electrode used in the uterus is more hæmostatic than the negative, and that is on account of the cicatrix which follows the use of the positive electrode being more prone to contract; the cicatrix following the negative being like the cicatrix of a burn with caustic alkali. From my own experience in the use of electrolysis I find frequently that, at the time of operating, there is a slight hæmorrhage, or at least an oozing of bloody serum, more likely to follow the use of the positive than the negative pole, especially if any other than a platinum electrode is used. The destruction of tissue around the positive pole is not nearly as great as that around the negative, the oxygen is separated around the positive pole and the acids are liberated, and I find the eschar which follows essentially the one produced by the action of the strong mineral acids on albuminous tissue. On the other hand, if the negative pole is used,

we find that the destruction of tissue extends probably twice as far from the electrode. The appearance is entirely different, that from the negative pole looking very much as though it had been frozen, and the scar tissue which results from the use of the negative pole does not contract as firmly as does that which follows the positive, and it seems to me that this can be explained to a large extent by the chemical action which takes place along the electrodes. There are two, and possibly three factors present in this method of using electricity: there is the physical effect, due of course to the liberation of the gases around the electrodes; there is the chemical effect due to the electrolysis or separation of the salts of the body into the acids at one pole and the alkalies at the other; and then there is the physiological effect, which we do not understand as well as we do the chemical and physical effects. Whatever be the amount of chemical action which takes place around the pole that is in the uterus, an equivalent amount of chemical action takes place under the electrode that is placed on the abdomen, and almost invariably you will find an irritation of the skin, and you may possibly get a blister within the circumference of the electrode, so that on the second or third day you will find that it is difficult to apply the electrode where it was first applied. That the electricity, as it passes through the tumor, affects the cell life, is a question yet to be proven, and I think the determination of the matter can be considered almost entirely due to the peculiar chemical action which takes place around the electrode.

DR. E. J. DOERING: I would like Dr. Martin to make an explanation about the strength of the current which can be used. There seems to be considerable difference of opinion among gentlemen in various parts of the country.

DR. FRANKLIN H. MARTIN: The question is a difficult one to answer in the time I have at my disposal, but I would say briefly that, with the means of concentration that I have adopted in my intra-uterine flexible electrodes, a current of from 50 to 100 milliamperes is all that is necessary in order to obtain all the benefits of this treatment. Without these electrodes, however, and by the original Apostoli method, I have employed currents ranging from 100 to 1,000 milliamperes, and this without any detrimental effects.

(To be concluded.)

GYNECOLOGICAL SOCIETY OF BOSTON.

HERBERT J. HARRIMAN, M.D., SECRETARY.

Stated Meeting, February 9, 1888.

THE PRESIDENT H. C. WHITE, M.D., IN THE CHAIR.

DR. C. W. STEVENS read a paper on

CORROSIVE SUBLIMATE INTERNALLY IN PUERPERAL AND OTHER SEPTICEMIAS.

(See page 615, THE JOURNAL, of May 19.)

DR. A. P. CLARK said that he had had no experi-

ence in the use of corrosive sublimate in the way recommended by Dr. Stevens. His usual course was to remove all clots and placenta as thoroughly as possible, using the curette if necessary in cases of abortion. Quinine, antifebrin, antipyrin and similar agents were used as indicated. Dr. Clark has been shy of intra-uterine injections of late years, believing that their use is unnecessary and dangerous. For a local application he uses tr. of iodine, upon a cotton-wrapped applicator.

DR. A. E. McDONALD had never tried the mercuric bichloride in puerperal septicemia, but had used it with great satisfaction in the treatment of diphtheria, giving doses of $\frac{1}{2}$ of a grain of the drug until characteristic diarrhoea appears. With this treatment is combined the use of quinine.

He had, however, used iod. salicylat. in puerperal septicemia with apparent benefit. He usually orders 5j of the drug in an 5j of the vehicle and directs that 5j be given every three or four hours.

DR. SAMUEL N. NELSON said: The use of antiseptics in puerperal fever seem to me a necessity, but I think that the chief advantage to be derived is from their employment locally, and when used systematically they have little if any perceptible effect. When they do have any effect I cannot believe it due to their antiseptic qualities as such. This is particularly the case when the question is concerning corrosive sublimate, of which the dose compatible with safety is very minute, particularly in proportion to the weight of the body of an adult. Note the dose advocated by the reader, viz.: $\frac{1}{16}$ of a grain at the beginning every three hours, which may be increased to $\frac{1}{8}$ of a grain. Dr. Ernst is quoted as authority for the statement that corrosive sublimate in the proportion of 1 to 10,000 will restrain the growth of microorganisms, and this is cited as the reason for giving the drug in the above mentioned dose. Does it fulfill the conditions? With the larger dose mentioned ($\frac{1}{16}$ grain every three hours) only $\frac{1}{6}$ grain is taken in twenty-four hours, and if for convenience we estimate the average weight of an adult at 100 lbs. or 700,000 grains in round numbers (which is below the actual figure) we find that the proportion of medicine taken in the whole twenty-four hours to the weight of the body is 1 to 4,200,000, which is only $\frac{1}{4,200,000}$ part of the proportion cited as authority for the dose. In point of fact, Dr. Ernst falls far short of the mark, when he says that a solution of corrosive sublimate 1 to 10,000 restrains the growth of microorganisms. Many years ago Koch and Sternberg showed that the solution 1 to 10,000 would kill them when exposed for two hours. And at least four years ago I reported to this society a series of experiments in which I showed that the solution 1 to 10,000 killed the germs in five seconds in every one of several experiments. And although I have not investigated further, I believe that a much weaker solution will kill them in this exceedingly short time. Moreover, considerable larger doses of corrosive sublimate than has been recommended can be borne. Pepper recommends, if I remember the figures correctly, doses of $\frac{1}{16}$ to $\frac{1}{8}$ of a grain every two hours for children of about five years old sick

with diphtheria; and used thus, he considered it almost a specific. In the spring of 1884, when ill with a severe attack of diphtheria, I took a grain of corrosive sublimate every day for a week in addition to frequent gargling with a 1 to 1,000 solution—and I am alive to tell the fact. When taking a grain a day, I took only about one to one-millionth part of my own weight, and even this proportion is much too small to think that good effects can come from the use of the drug on account of its antiseptic properties as such.

The advantages of antiseptics locally, however, should not be over-looked, and here I should place corrosive sublimate at the head. He who has made an autopsy after death from puerperal fever, and seen the whole interior of the large non-involved uterus, a stinking slough will appreciate the need of action here. All that can be easily removed should be removed, and frequent irrigations of corrosive sublimate solution 1 to 1,000 should be employed. How much better, however, an antiseptic delivery, and hence a normal recovery!

If corrosive sublimate has any effect in shortening or curing the disease when taken into the system, I believe that we must find some other explanation than its antiseptic properties, and if repeated trials show good results it is most certainly a valuable remedy, and I hope to hear further reports concerning it.

DR. H. C. WHITE said that in the computation given by Dr. Nelson, showing the relative weight of the antiseptic compared with the body weight, the solid tissues should not be considered, as they are not invaded. Only the fluid constituents of the body, such as the blood or serum, should be reckoned.

He was much interested in the use of antiseptics internally in such cases, and hoped that good might come from such use. The routine use of intra-uterine injections by the average physician is a source of danger and should be discouraged. In the puerperal state nature provides proper treatment, and the woman ought to be left alone as regards any interference with the genital tract. Heat is the best disinfectant, and should be applied to the hands and all cloths and garments used about the patient. Dr. White has used one drug more than any other in the diseases in which septic conditions may arise, namely: sulphurous acid. This drug has always answered all reasonable expectations. The failure of the remedy in other hands may be due to its poor quality. The preparation must be *fresh*, as otherwise the gas will escape and the medicine become inert and valueless. But few druggists can be relied on to provide always a fresh and efficient preparation.

DR. GEO. W. NASH, a guest of the Society, said that at the Rotunda Hospital, Dublin, the practice in cases of puerperal septicæmia was to thoroughly wash the uterus with a 1-20 solution of acid. carbol. He had never seen hydrarg. chlorid. used there in such cases.

DR. E. W. CUSHING said he had not arrived in season to hear the paper read and could only judge it from its title. He was not disposed to assign much value to corros. sublim. used as suggested. It is im-

possible to tell, in the present state of our knowledge, in just what form the germicide enters the blood and in what way it is eliminated. When corros. sublim. is mixed with blood in a test-tube it forms at once an albuminate of mercury. The only way, however, to settle the question as to the efficacy of the drug in septic troubles, will be to pile up cases and thus arrive at the facts. Dr. Cushing's practice in these cases was to thoroughly scrape out the uterus under antiseptic precautions and then to thoroughly wash it out. The disorder is undoubtedly due to bacterial infection, and in all the cases dying in Vienna of puerperal infection during his stay there was found the same forms of bacteria which we find in wound infection. A bad smell is no criterion by which to judge of the danger. The most virulent bacteria are odorless. Our hope in these cases of puerperal infection is in being able to remove all the offending matter. When the infection has spread beyond the uterus and thrombi have formed in the veins of the broad ligament, little can be anticipated from any kind of treatment. Hydrarg. bichlorid. may be given hypodermically with safety.

DR. F. D. BURT said that he had the feeling that the corrosive chloride internally is of no use in septicæmia. The usual practice has been described by Dr. Cushing, but the greatest difficulty lay in removing all the offending matter. In accomplishing this object the use of the swab is much more efficient than intra-uterine injections as ordinarily used. The simple current of the solution has but little detergent power over decomposing shreds of tissue which may be attached. By the thorough use of a swab, however, these offending tissues may be more successfully removed.

DR. W. SYMINGTON BROWN said that he was deadly opposed to the use of corros. sublim. in any manner. It is the most easily decomposed and most dangerous of any of the mercurial preparations. The chemical changes which it undergoes when entering the blood prevents its reaching the germs of disease. Whatever good effect results from its use probably arises from its alkaloid action. Dr. Brown believed that washing out the uterus was not the best and most efficient way of cleansing that cavity, but that the use of the swab was much more effective. He always used tr. iodinii as a local application on the swab. From the use of corros. sublim. forty or fifty cases of dysentery have been reported, and this fact shows its highly dangerous character.

DR. C. W. STEVENS, in closing the discussion, said that in puerperal septicæmia there was a natural tendency to diarrhoea, but that the use of the corrosive chloride in small doses did not increase the trouble and was not dangerous. He had never kilogrammed his patients to find the exact proportion between the dose and body weight, but had formed his favorable opinion of the drug entirely from clinical results. This use of the drug is a resurrection of a former mode of practice, and may prove to be of value in septic troubles.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, February 8, 1888.

THE PRESIDENT, THOMAS C. SMITH, M.D.,
IN THE CHAIR.

DR. ROBERT T. EDES read a paper on
IDIOPATHIC ANEMIA.

(See page 648.)

DR. REYBURN's experience in this field had been very limited, as he had only had one case in the past six years. The woman having been treated by a number of physicians without any benefit, finally fell into his hands. She was emaciated to an extreme degree, and had palpitation. He could not trace the cause. As a last resort he tried Mitchell's method of forced feeding. She was confined to bed, was given six pints of milk daily; massage was applied; she recovered. This was a well-marked case. He would ask Dr. Edes as to the treatment in his case.

DR. EDES had not dwelt much upon treatment. A great majority never recover. He depended, however, upon arsenic and feeding. Nearly all the cases which have recovered have done so under arsenic. In his cases there was not forced, but rectal feeding. One of the first things to suggest itself in the treatment was, of course, transfusion, but experience had shown this to be of very little value in the treatment of idiopathic anemia, and often worse than useless.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Microbes of Epidemic Dysentery—Smokers' Vertigo—Antipyrin in Labor—Glycerin as a Purgative Enema

At a recent meeting of the Academy of Medicine, M. Cornil, on behalf of MM. Chantemesse and Fernand Vidal, read a note on the *microbes of epidemic dysentery*. He added, as a conclusion, that the presence of the bacillus discovered by these observers in the intestinal parietes, the mesenteric glands and the deep organs of a man having succumbed to an acute attack of dysentery, the observation in the stools of five dysenteric patients, its absence in the stools of men in health, the lesions which it gives birth to in the intestine and the viscera of guinea pigs experimented on, plead in favor of its specificity. M. Le Roy de Méricourt, an old naval surgeon, observed that two medical men of the navy described, ten years ago, the microbes of the diarrhoea of Cochinchina, considering them the pathogenic agents of this malady, but their discovery has not proved of any consequence in a therapeutical point of view. As regards epidemic dysentery the speaker observed that he could with difficulty admit its microbial origin, dysentery not being contagious, as was demonstrated by observations that he had occasion to make, whether in his long voyages on board men-of-war

ships, or at the Maritime Hospital of Brest, where he had numbers of cases of dysentery under his care. M. Rochard, another old naval surgeon, concurred with M. Le Roy de Méricourt on the non-contagiousness of dysentery, of which he had observed several cases having divers degrees of gravity. He thinks that the microbial or non-microbial origin of this malady is not demonstrated, at least clinically. To this M. Cornil made the remark that the presence or absence of microbes does not necessarily imply the transmissible or non-transmissible character of a malady. For instance, he said that leprosy is distinctly a microbial malady, and yet its contagious nature is nothing less than demonstrated. For M. Cornil, all the chapters of general pathology relative to contagion, infection, endemicity, epidemicity, require to be rewritten with new elements, and in keeping with the discoveries of modern science. M. Le Roy de Méricourt expressed satisfaction at having heard M. Cornil declare that all microbial maladies are not necessarily contagious. This declaration, he said, was necessary if it were only to appease the public mind, which is imbued with the idea that contagiousness is inseparable from the microbial nature of a malady. Thus, for instance, there are many persons who would not have their children vaccinated with human vaccine lymph for fear of tuberculosis being transmitted to them. M. Cornil responded that the microbe of tuberculosis had never been met with in vaccinal virus; there is therefore nothing to be feared in this respect, though this should not prevent every precaution of prudence being taken in the choice of vaccine subjects.

At a previous meeting of the Academy, Dr. Decaisne read a note entitled: "The Vertigo of Smokers." The author formulated the following conclusions based upon observations of 63 inveterate smokers presenting different degrees of vertigo more or less frequent, more or less accentuated: 1. Of the 63 subjects of from 29 to 66 years of age, 49 were aged from 50 to 66 years. 2. More than half presented besides, other digestive troubles, alternations of constipation and diarrhoea, dyspnoea, exaggerated urinary secretion and sweats more or less abundant, insomnia, and palpitations. One-third had intermissions of the pulse and granulous angina, some of them had emphysema, apthae, amblyopia, spitting of blood. One hundred and thirty-seven cases referred to young smokers in whom the vertigo was produced almost always in the morning. 4. The occurrence of vertigo coincided, in one-third of the cases, with the suppression of profuse sweats and a marked diminution of the urinary secretion. This phenomenon may be easily interpreted by all physiologists. 5. Sometimes the symptoms of the vertigo of smokers have been confounded with that of cerebral congestion and even of diseases of the heart. This error of diagnosis may lead to the most serious consequences, and the author knows at least of one case that came under his notice who died after having been copiously bled for vertigo supposed to have been caused by cerebral congestion, whereas the real cause of death was attributable to excessive tobacco smoking. The author explains that in nicotic intoxication there is at

first contractions of the blood-vessels, which produces vertigo, then, the reaction supervening, the same vessels become dilated, this is the period of congestion. 6. The treatment of the vertigo of smokers which Dr. Decaisne has always employed with success consisted in the absolute suppression of tobacco, and the regulation of the habits of the patient. In 28 cases, while the patients were under the influence of vertigo, hypodermic injections of ether were employed which removed it in a few minutes. 7. Of 37 subjects who smoked on an empty stomach, the vertigo disappeared in 33 who took to smoking after meals.

Dr. Laget, of Marseilles, lately related at the Société de Biologie that he had employed *antipyrin* in a case of premature confinement, in the second stage of labor when the pains which were very severe rendered the uterine contractions of but little efficacy. Two successive doses of antipyrin of two grams each rapidly reduced the pains and, as a consequence, produced a regularity of the uterine contractions the strength of which was in nowise diminished.

The *Courrier Médical* publishes a note of Dr. Arnacker on the advantage of *glycerin* as a purgative *enema*. The author employs only 50 drops of glycerin which are injected into the rectum by means of a syringe with an olive-shaped nozzle. This injection produces a purgative effect very rapidly, and the explanation of the action of the glycerin in this case is the attraction that it exerts on the watery part of the blood. The result is an exaggerated repletion of the vessels of the lower portion of the large intestine causing a peristaltic action, and finally diarrhoeic stools.

A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM BOSTON.

(FROM OUR OWN CORRESPONDENT.)

The One Hundred and Seventh Anniversary of the Massachusetts Medical Society.

The Massachusetts Medical Society, which celebrated its centennial anniversary seven years ago, will meet in Boston June 12 and 13, 1888. The meeting promises to be of rather exceptional interest, judging from the titles of the papers that are expected to be presented. Huntington Hall in the Institute of Technology building on Boylston St., which has so admirably served for several years past, has again been selected as the place of meeting.

At 2 P.M. on the first day, Tuesday, June 12, the following papers will be read:

Private Mental Sanitaria and the Inebriates.—By Austin W. Thompson, M.D., of Northampton.

Therapeutic Nihilism.—By Maurice D. Clark, M.D., of Haverhill.

Uterine Displacements and their Influence on the General Nervous System.—By Francis H. Davenport, M.D., of Boston.

The Modern Practice of Surgery.—By Otis K. Newell, M.D., of Boston.

The Treatment of Hypertrophy of the Prostate with Special Reference to Operative Measures.—By Francis S. Watson, M.D., of Boston.

A Study of Phthisis and Pneumonia in Massachusetts; Statistical and Climatological.—By W. Everett Smith, M.D., of Boston.

The one hundred and seventh annual meeting will be held at 9 A.M., on the second day, Wednesday June 13. After the transaction of the annual business the following papers will be presented:

Postural Treatment of Constipation.—By Edward T. Williams, M.D., of Roxbury.

The Surgical Treatment of Malignant Growths.—By Maurice H. Richardson, M.D., of Boston.

The Value of Corrosive Sublimate as a Practical Disinfectant.—By William B. Hills, M.D., of Cambridge.

After the introduction of delegates the annual discourse will be delivered at 12 M. by B. Joy Jeffries, M.D., of Boston, during the reading of which the hall doors will remain closed.

At 1 P.M. The anniversary chairman and invited guests will meet the Fellows of the Society at a reception and banquet to be held at the Hotel Vendome. In pursuance of a time-honored custom the Fellows, in the order of their Seniority, will walk in procession from the hall to the hotel. No person will be admitted without a ticket. These are to be distributed to those Fellows who have paid their dues for the current year.

During Tuesday and Wednesday, at the Institute of Technology, there will also be an exhibition of drugs, chemicals, pharmaceutical preparations, foods, surgical instruments and appliances of all kinds, apparatus relating to hygiene, and books.

N.

DOUBLE VAGINA.

Dear Sir:—The following interesting case of double vagina came under my observation May 2, 1888: Mrs. L. C., et. 23, had been in labor six hours. I found a breech presentation and the os uteri dilated sufficiently to admit three fingers. As the finger was introduced for the purpose of making the examination nothing abnormal was discovered in the vagina. But before withdrawing the finger, on sweeping it from side to side, it seemed to enter a kind of pocket to the left. A careful exploration then revealed a vertical septum, dividing the vaginal canal into two nearly equal lateral halves. Its thickness would average about one-eighth inch; its breadth was about two inches from above downward. Near the cervix uteri it was incomplete, permitting the finger to pass through from one side to the other, thus at first giving the impression of a pocket, as above described. After the cervix became fully dilated, this septum, in order to gain more room, was divided with blunt pointed scissors. The labor was then completed without further accident. The patient had but one uterus and one cervix, and was not before conscious of ever having had more than one vagina.

H. MOULTON, M.D.

Stuart, Iowa, May, 1888.

A REPLY TO "COUNTRY PRACTITIONER."

Dear Sir:—The letter of your correspondent, "Country Practitioner," in your issue of May 19th, implies a somewhat common misunderstanding of the position of those who believe and teach that the discovery of Semmelweiss was both radical and vital. So far as this reply is concerned, it is immaterial whether he believes what his letter implies, or whether he has simply taken the occasion which the absurd performance reported allows, for clever ridicule and irony. The misapprehension to which I refer is, the impression that a careful compliance with the established principles of asepsis will secure only a diminished mortality in puerperal cases. The fact being that the claim is that thorough asepsis will secure also an increased number of puerperal cases in which no abnormal rise of temperature occurs, and that an obstetrician may have failed to secure all that he ought to secure in many of his cases which do not die. In other words, mortality statistics alone, although they are ample, are not a sufficient test of the principles of aseptic and antiseptic obstetrics.

Your anonymous correspondent is evidently bright enough to know all this, and hence this reply is not directed against him, but rather as a counter influence against the carelessness which the tone of his letter may induce in a less intelligent or less careful accoucheur or nurse, and thus cost some poor woman, if not her life, many days of unnecessary fever.

ELBERT WING, M.D.

3266 Cottage Grove Ave.

RUPTURE OF THE FUNIS.

Dear Sir:—Seeing in THE JOURNAL of April 21, a report from Dr. Duncan, of West Point, Miss., of a ruptured funis, in which he speaks of the rarity of the accident, I conclude to report this case:

On March 3, 1888, I was called to Mrs. L. in her fifth confinement, having pains one in three to four hours. An examination showed the os very high, in fact out of reach. I gave morphia gr. $\frac{1}{2}$, bromide potash gr. x. I returned in eight hours; found bearing down pains, and the head had reached the perineum, but receded after each pain. After watching this movement for an hour I applied forceps, and used considerable force. I felt a snap, and the woman jumped, but the child was born immediately, and I found the cord broken about one inch from the navel. It was wrapped about the neck and shoulders of the child until it seemed impossible for it to have been born without the rupture of the cord, which was of usual length.

Both mother and child did well.

P. C. YATES, M.D.

Neosho, Mo., April 25, 1888.

JUST RETRIBUTION.—A man with a sore arm went into a Grand Rapids drug store the other day and asked what was good for it. The druggist, who thinks he knows a thing or two about medicine himself, took the man behind the prescription case, gave the arm a critical examination, and mixed up a healing liquid. Then the man took his arm and went away, and the learned apothecary went to his bill and found that over \$50 of his good, hard money had been stolen. The man with the sore arm evidently had a pal whose arm was not sore.

BOOK REVIEWS.

A TREATISE ON DISLOCATIONS. By LEWIS A. STIMSON, B.A., M.D., Professor of Clinical Surgery in the University of the City of New York, etc. 8vo, pp. 539. Philadelphia: Lea Bros. & Co. 1888. Chicago: A. C. McClurg.

This work is supplementary to the one on Fractures issued five years ago by the same writer. The work has been divided into two treatises, properly enough, and in the interval one edition of Hamilton's standard work has been given to the public.

The work of Prof. Stimson will be examined everywhere with interest, if for no other reason than because it is several years later than any similar textbook. The delay in publication is caused by the great amount of clinical material collected and used in its preparation.

Hamilton's cases are chiefly selected and illustrative, with no claim to statistical fullness, and are almost solely taken from American sources. Prof. Stimson's work aims at a much fuller citation of foreign and American cases, and at the same time is marked by less of the writer's own individuality.

The *Index Medicus*, *Index Catalogue* of the Surgeon-General's Library, and the numerous standard treatises and encyclopedias, have been searched and copious references made from, bringing the work down to the present as far as is possible. As to dislocations no very important changes in surgical practice have occurred within a decade, so that the most recent treatises differ but little in essential points from those somewhat older. English and American surgeons have been, and still are, the undisputed masters of this mechanical branch of the art, as well as of orthopaedic surgery. Standard treatises in all European languages contain, with little variation, the descriptions and illustrations of Sir Astley Cooper, Bigelow and Hamilton which have become familiar by their reappearance in nearly every surgical treatise in the English language.

The original steel plate engravings in Cooper's work on dislocations, now over a hundred years old, are marvelous for their fineness and perfection of drawing. These pictures, reduced in size, have been copied into every important work until the present day. The same is true of the illustrations taken from Bigelow's later work, *The Hip*.

Prof. Stimson has very properly sacrificed artistic effect to progress and left out all of Cooper's pictures which illustrate the antiquated method of reduction by pulleys. Bigelow's drawings to the number of twenty are introduced, and numerous others, few of them original, are incorporated in the same chapter. The desire to make a complete and systematic treatise has led to subdivisions of theoretical rather than clinical importance. Several chapters are devoted to different forms of dislocation of the humerus, yet nowhere is there any complete account of old dislocations of this bone and the various dangers attending efforts at reduction.

As a general fault it may be noted that the book too often mentions an array of cases gathered from various sources with little or no summary of the au-

thor's own conclusions. Whether this be due to want of care in editing or too great modesty on the author's part, it impairs the value of the work for reference. Those who especially desire to refer to the fullest and latest collection of statistics on this subject will nevertheless find it in Prof. Stimson's work, which is quite likely, therefore, to become a standard authority.

SECOND SERIES OF PHOTOGRAPHIC ILLUSTRATIONS OF SKIN DISEASES. A complete work on Dermatology. An Atlas and Text-book combined. By GEO. H. FOX.

The first two parts of this work have already been noticed in *THE JOURNAL*. The standard of excellence is maintained fully in the third and fourth now at hand. We cannot speak too highly of the faithfulness of the illustrations. The coloring of these plates is much more correct and lifelike than of any similar collection seen by us. It must be remembered that this is not simply a new edition but an enlargement of the old edition, which makes it a complete text-book as well as atlas.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN, for the Use of Students and Practitioners. Second edition. Thoroughly Revised and Enlarged. By JAMES NEVINS HYDE, A.M., M.D. Pages 676. Philadelphia: Lea Bros. & Co.

We are much pleased to see a second edition of Dr. Hyde's well-known and most excellent book called for so soon. Changes have been made on almost every page, much has been rewritten and new chapters have been added. The nomenclature has been made to conform to that adopted by the American Dermatological Association. The illustrations are numerous. Those depicting morbid histology are accurate and well chosen. Two colored illustrations of unusually rare diseases have been introduced.

MISCELLANEOUS.

THE ROCKY MOUNTAIN MEDICAL ASSOCIATION held its seventeenth annual meeting in the parlor of the Burnett House, Cincinnati, on Wednesday evening, May 9, 1888. Dr. N. S. Davis was called to the chair in the absence of the President. The following members were in attendance: Drs. Davis, Toner, Wise, Donahue, Findlay, Atkinson, Elmer, Stanton, Hibberd, Pollock, Asdale and Morris. Honorary members: Mrs. Davis, Mrs. McMeans, Mrs. Hibberd and Mrs. Donahue. The proceedings of the last meeting and the memorial record were read by the Secretary. Two deaths were reported during the past year, viz.: Dr. D. W. Stormont, of Topeka, Kansas, and Dr. A. E. Heighway, of Cincinnati, both born in 1820.

Dr. William Elmer, of Bridgeton, New Jersey, was then elected President, and Dr. John Morris, of Baltimore, Secretary and Treasurer. On motion of Dr. Davis a resolution was passed requesting the Secretary to send a card to all the members, so as to secure accurate knowledge as to the number of survivors of the Association. The meeting adjourned to meet at Newport, June, 1889.

JOHN MORRIS, M.D.,
Secretary.

THE OMAHA MEDICAL CLUB, says the *Omaha Clinic*, is an association of physicians, and is of a most peculiar type. It is without any organization whatever, it has no officers, not even a chairman, and is governed without any rules. Any regular physician in good standing is entitled to admission to its meetings, and all such are cordially invited to be present and take part in the work of the club. There is no expense connected

with it. The regular meetings of the club are held on the first and third Wednesday evenings of each month, at the office of the physician whose duty it is to read a paper. Every act of each person attending is purely voluntary. The utmost freedom of action prevails as regards work to be performed, the club being governed solely by the rules of polite society which prevails in the drawing-room. So far it has been a pronounced success, and the work very satisfactory, since only earnest workers and sincere students of medicine are in attendance.

THE WATER-SUPPLY OF GROWING CITIES is the subject for which a prize is offered for International competition in 1893. It is one of a series of annual prizes offered by the King of the Belgians, the value of which is 25,000 francs for each award. The essays of those desiring to compete must be addressed to the Minister of Agriculture, Brussels, before January 1, 1893.

NEW BOOKS RECEIVED.

Report of the Health Officer of the District of Columbia, 1887. Physician's Leisure Library: Pleurisy and Pneumonia. By Garland.

The Infectious Diseases. By Karl Liebermeister. Translated by E. P. Hurd. Detroit: Geo. L. Davis.

A Manual of the Minor Gynecological Operations. By J. Hal-Jiday Croom, M.D. First American Edition, by L. S. McMurtry, M.D., A.M. Illustrated. 1888. Philadelphia: Ricords, McMullin & Co.

Intubation of the Larynx. By F. E. Waxham, M.D. Chicago: Charles Lucas.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MAY 12, 1888, TO MAY 26, 1888.

Par. 114 S. O. 104, A. G. O., May 5, is amended by par. 4, S. O. 105, A. G. O., May 10, 1888. Major Chas. R. Greenleaf, Surgeon. Major Robert M. O'Reilly, Surgeon, Capt. Jno. O. Skinner, Asst Surgeon, are detailed as a board of medical officers to assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of the candidates for admission to the academy, and, in connection with the superintendent of the academy and commandant of cadets, the members of the graduating class.

Capt. D. M. Appel, Asst. Surgeon, will be relieved from duty at Ft. Davis upon the arrival of Capt. J. V. Lauderdale, Asst. Surgeon, and proceed to Ft. Hancock, and report to the commanding officer of that post for duty. S. O. 49, Dept. Texas, May 5, 1888, and S. O. 50, Dept. Texas, May 9, 1888.

First Lieut. Guy L. Edie, Asst. Surgeon, will proceed, not later than the 25th inst., to Ft. Concho, and report to commanding officer Eighth Cavalry for duty as medical officer, in compliance with par. 13, S. O. 99 c. s., Hdqrs. of the Army. S. O. 49, Dept. Texas, May 5, 1888, and S. O. 50, Dept. Tex., May 9, 1888.

First Lieut. F. T. Walker, Asst. Surgeon, will be relieved from duty at Ft. Ringgold, and proceed with Company D, Sixteenth Infantry, to San Antonio; he will then report for duty to commanding officer Post of San Antonio. S. O. 49, Dept. Texas, May 5, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 19, 1888.

Surgeon Edward Kershner, detached from U. S. S. "Pensacola," and wait orders.

Asst. Surgeon J. S. Sayre, detached from U. S. S. "Pensacola," and wait orders.

Surgeon W. H. Jones, detached from Navy Yard, League Island, and to "Pensacola."

Surgeon G. H. Cooke, ordered to the Navy Yard, League Island. P. A. Surgeon Millard H. Crawford, ordered to the "Vandalia."

Asst. Surgeon F. W. F. Wieber, detached from "Vandalia" and ordered home.

Asst. Surgeon E. P. Stone, from Naval Hospital, New York, and to the "Pensacola."

P. A. Surgeon G. E. H. Harmon, commissioned a Surgeon May 12.

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No. 22.

THE ADDRESS IN MEDICINE.

Delivered at the Thirty-Ninth Annual Meeting of the American Medical Association, Cincinnati, May 9, 1888.

BY ROBERTS BARTHOLOW, M.D., LL.D.,

PROFESSOR OF MATERIA MEDICA, GENERAL THERAPEUTICS AND HYGIENE, IN THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, ETC.

Mr. President and Gentlemen: The last International Medical Congress, in some respects, was the most important of the series. In the discussion of those great topics included within the domain of State or preventive medicine, matters of high interest for all educated people, of the greatest importance to the well-being of society, and that exhibit in the clearest manner the disinterested benevolence of the medical profession, were fully considered. To an unprejudiced observer it would seem that matters of such high interest would receive respectful attention, and such practical benevolence be greatly appreciated by the great organs of public opinion—the daily newspapers: it must be admitted that it did not prove to be so.

It is a remarkable fact that the proceedings of the Congress were revealed to the universal public in a manner that is not too strongly characterized by the word *flippant*. In explanation of this phenomenon it was said that such is the usual attitude of the press toward the medical profession; that these representatives of current opinion do not take the profession "seriously," but rather view the men, and the work of the Congress, as a comedy performance, to be criticised and laughed over on the same lines. If the great metropolitan dailies stood alone in this attitude, it were the less surprising; but, unfortunately, others participate. No thoughtful observer can have failed to see that such is the disposition of the press throughout the country toward all medical organizations. The same position is assumed by a certain element in American society that delights to be considered "cultured." By these, a physician is a "medico," and the art and science as a profession or business, is no higher esteemed than such shows as Barnum's woolly-horse, or Chang the Chinese giant. Recently at a meeting of a medical jurisprudence society, several members, scientific men, questioned the accuracy of some statements made by the author of a paper who is connected officially with the Coroner's office. For thus presuming to question an official, they were sharply criticised by the prosecut-

ing attorney, who happened to be present, and he also chided them in a manner befitting a pedagogue to his naughty boys, rather than members of a scientific body.

The causes of this state of things are not far to seek. Every one here present must be familiar with them. I purpose only to consider those which have to do with the therapeutic art—the most important.

Not a little of the ignorance, the crudities, the vague theories of the eighteenth century still linger in the nineteenth century near its close. It is yet understood by many that the therapeutic art is based on some *ism* or dogma. "Allopath" and "homœopath" are still bandied about as having vital power, when they were long since relegated to the lumber-room of the past by modern science. We yet hear of "new school" and "old school," as if notions brought out near the close of the last century, compounded of the vagaries of Hahnemann and the mysticism of Mesmer, could still continue guides to practice. The contentions of so-called "schools," the noisy demonstrations of the Thompsonians, and electricians, and physio-medicals; the rapid water-cure, and the innumerable special cures, have produced in the popular mind a distrust of all systems.

The cry of "new school" has proved the most sympathetic; but the attractive sugar pellets, and tasteless liquids, carry with them their own destruction, for, in the deeper consciousness of men, lies the fatal objection that great results are not to be accomplished by such slender means. Hence, left to its own course, homœopathy has practically died out on the Continent. On this side of the Ocean it still maintains a certain influence, because of social conditions and prejudices that are only possible in free communities.

The success of such wretched puerilities, such inanities as the homœopathic practice consists of, does more to lower the position of the medical profession than any other cause. The false statistics published as actual fact, accepted as true, and passing unchallenged, are at this moment doing an almost incredible amount of mischief. Two years ago a pamphlet was very widely distributed throughout the West, as a trade document, containing much falsehood in the way of statements of pretended scientific truths, and fictitious statistics, that placed legitimate medicine in a false position, and discredited its practice to a most serious extent. This pamphlet was issued by a St. Louis homœopathic pharmacy, and was written by a Dr. Somers, who

had been a professor in the faculty of Iowa University, and it had, therefore, an air of authority that materially contributed to its success. The usual tirade against allopathy—its past errors, and its present uncertainties—occupied much of this pamphlet, but its really effective part consisted in statistics made up out of the whole cloth. These statistics, it is asserted, were obtained from official publications, and gave the results in numbers of the comparative success of homeopathy and allopathy, in the cities of Boston, New York, Philadelphia, and others. It was thus shown by pretended official figures, that homeopathic practice is invariably from 30 to 50 per cent. more successful than allopathic.

What answer can be made to such statements, apparently supported by official figures? I am informed by a physician of the best reputation, living in a large city of the West, that this pamphlet was sent to every house-holder in a considerable town, that legitimate practice was in a short time completely destroyed, and every regular physician reduced to extremity. We need not be surprised. How could any physician answer those immutable figures? Those who suffer from the effects of such misrepresentations are clear that an adequate answer should be made, although the profession is averse to medical polemics—for, wherever this lying paper has gone, the regular practitioner is silenced. Here are the official figures—what will you do about it? It remains unanswered, and is yet doing its work efficiently as a trade circular.

When this pamphlet was brought to my notice, I communicated with the official authorities to learn about the source and probable value of these pretended official figures. I expected to discover manipulations which made the figures tell the story that suited the purposes of the St. Louis drug house; but I was amazed to hear that no statistics of this kind exist at all, that a return showing the effect of a system of practice on the mortality rates had never been made, and therefore never published, and hence the figures given in the pamphlet were made out and out. I ascertained on further inquiry that though every aid were given, it would be a matter of infinite difficulty to get such figures, and to assure their accuracy would require an amount of time and trouble that hardly any one could give to such a task.

We cannot but regret that such misrepresentations should go unexposed. No other argument were needed to demonstrate the falseness of a system, maintained by frauds of such a shameless character; but meanwhile the advocates of the system profit by the forbearance of the medical profession in the attitude of maintaining its dignity.

The one remedy for existing ills—and to put the medical profession in its proper attitude as a scientific body—is to improve the art. How can the application of remedial agents be rendered more certain?

As a teacher of therapeutics for many years, I could not fail to observe that the attainments of the profession in respect to the powers of medicines are not as fully developed as they ought to be. They do not have that familiarity with the physiological

powers of drugs which the effective use of remedies demands. It thus happens that the highest precision is not attained. Vague notions take the place of scientific accuracy when such has been the progress in this department, that a considerable degree of certainty should be the rule.

It must be admitted that the acquisition of therapeutical skill has been greatly hampered by the complexity of the materials. The barnacles of a century have been accumulating on the framework, and the new knowledge has been thrust into the crevices of old notions until all is made to appear confused and uncertain.

The subject should be divested of its superfluities. The list of preparations given in the *U. S. Pharmacopæia*—our only official authority—can be greatly curtailed with advantage. Remedies long in use and of comparatively little value are overloaded with formulæ. The preparations of iron given by the *Pharmacopæia* are thirty-eight in number, of mercury twenty-five, of rhubarb fifteen, of aloes as many. One-third of these could perform the duty of all. The botanical and pharmaceutical details are such that to master them would require the whole of the time given to the medical studies. If obtained, such knowledge is of small value to physicians; therefore it should be turned over to the pharmacist, to whom it properly belongs.

It needs no argument to show that to accomplish the best results, not only the remedy in its crude form, but its constituents must be accurately known. Whenever an active principle is not available, the most concentrated preparations should be prescribed. In an especial degree is it necessary to have complete information regarding the dosage and actions of alkaloids. Let me emphasize in the most positive manner the importance of using the alkaloids and active principles, for by them we have minuteness of dose, singleness of action, and precision of effect.

In these "flabby days," as Mr. Froude entitles the present time, we must pay deference to taste, and secure the administration of a remedy which in a crude form may be rejected.

Under the name "*dosimétrique*" a system of therapeutics has been brought forward within a few years past, in which the point of departure is the exclusive use of the alkaloids and active principles made into granules. I will not enter into the theoretical notions on which Burggræve bases his system. Dr. von Penterghem has done me the honor to send me his volume, which contains the dosimetric system fully elaborated, but I do not find that there is any truth which can be considered new, except the form of the medicament. Furthermore, their work is superficial. Dosimetric practitioners are imperfectly acquainted with the physiological action of remedies—their point of departure. This so-called system is, therefore, little more than a name which it was hoped, there is reason to believe, might play the rôle once the fortune of homeopathy.

That to attain to any degree of accuracy the administration of active principles is necessary, is obvious enough. Crude drugs have a varying constitution due to climate, character of season, mode of

manipulation, and other accidents. A notable illustration of this truth is afforded us in the composition of *Pilocarpus*. It contains two active principles: one *Pilocarpine* constant in form and powers; another *Jaborine* variable. The proportion of jaborine found in different lots of the drug *pilocarpus* varies one from another, and the process of separating the alkaloid also affects the quantity. Now as jaborine is an analogue of atropine, and therefore opposed in the entirety of its actions to pilocarpine, it is clear that the crude drug must be uncertain in its effects and one specimen vary from another in the most radical manner. In this way only can be explained the conflicts of observation first noted; for the alkaloid pilocarpine acts in a uniform manner, and must continue to do so. To obtain the desired results it is clear that the alkaloid and not the crude drug must be used.

There are many illustrations of the same truth: for example, in the actions of cinchona and quinine, opium and morphine, nux vomica and strychnine, etc.

There can be but one basis for the administration of remedies. That must be a true, exact, and intimate knowledge of the manner in which they act on the tissues and organs of the body. This knowledge, as it now stands only in part developed, is large, somewhat complicated, but quite available, and will richly compensate all who will master its spirit and form.

It is within a comparatively short period that the study of the physiological action of remedies has been the basis of scientific therapeutics. The opening of the present century marked the very beginning of this movement, which, even now, is far from maturity. We owe to the genius of Magendie, seconded by the labors of Bichat, the fundamental principles, and to Bernard their practical execution. It is a curious fact, that when the foundations of physiological therapeutics were being laid, Hahnemann was developing his notion of the spiritual essence in medicines under the tuition of Mesmer, who, at that time, was firing the heart of female Paris with his magnetic force. To-day, under the title of "New School Medicine," we have this eighteenth century mysticism unchanged and unchanging, whilst legitimate medicine has been continuously developing, under the inspiration of all forms of physical science. To admit that homeopathy had any influence in the shaping of scientific medicine, is to admit its right to a hearing. It had nothing to do with the new forms scientific knowledge was taking, especially not with biology. Physiological therapeutics being the form the art of cure must, of necessity, assume, is there any law or rule which may serve as a guide to practical use? Of this there can be no doubt. The law of antagonism of action is such a guide within its proper range. By this is meant such a balancing of effects that the morbid action ceases. A capital illustration of the action, and of its consequences, is afforded us in the use of amyl nitrite in the relief of that form of angina pectoris with high tension of the vessels, and of fibroid kidney by the use of nitroglycerine. Here tissue changes are held in check, and ultimately removed, by remedies that oppose the morbid action, or that maintain a balance of effects until the lesions no longer exist.

Besides the antagonism that is direct, there is an antagonism that is similar. That a remedy which has a selective action on any tissue will have a curative action in the diseases of that tissue, is a proposition that is generally true. If the therapeutic action is similar to the morbid, the curative effect is in inverse proportion to the closeness of the correspondence.

If there be similarity of action merely, the curative effect is trivial or is entirely wanting. To illustrate: *Pilocarpus* is the most powerful sudorific we possess; but it is the least effective agent in the arrest of sweating. On the other hand, atropine is the most effective, and this, as all the world knows, dries the skin by stopping the action of the sudoriparous glands. If we place together the physiological agents now used to arrest sweating, we find that they are powerful in proportion to the degree in which they lessen the functional activity of the sweat-glands. Thus we have atropine, picrotoxin, strychnine and pilocarpine. Such a fact is conclusive against the theory and practice of homeopathy.

Next to the action of physiological antagonism as a means of securing accuracy in our therapeutical methods, must be placed the use of the physical forces. The important one, and that only to which I can allude, is electricity.

Infinite harm has been done to this subject by specialism. It is not yet divorced from charlatanism of the worst sort—the pseudo-scientific. The most serious embarrassment in assigning electricity to its rightful place in our *materia medica*, is the complexity of the subject. Unfortunately, no man can use the agent rightly who is unacquainted with its physics and physiology. Within the sphere of its curative action, it is simply unrivalled. That this strong statement is not universally accepted is due to the fact that this force is not sufficiently studied, and not appreciated because its powers are not utilized. Professional skepticism, added to the ill-repute which comes of inveterate quackery, acts in turn on the minds of patients, and thus prejudice is engendered that constantly interferes with the proper development of the science.

Notwithstanding the skepticism, or the positive unbelief, there are two facts that cannot be explained away or denied, for they rest on the immutable basis of physical truth.

The first fact is the power of galvanism to affect the circulation.

The second fact is electrolysis, or electrolytic decomposition.

Late researches have shown that a moderate galvanic current increases the vermicular action of the vessels and thus increases the blood supply to a part, and the activity of the function of nutrition. On the other hand, strong currents tetanize the vessels and thus lessen the amount of blood passing to a part, diminishing congestion. The same laws hold good of the faradic current if the parts to be acted on are so situated that the electrodes come in contact with the tissues.

As respects electrolysis, skepticism has no ground of opposition. The same laws that regulate polar action in electrolytic decomposition must be equally

applicable within the body as without, the same substances being acted on. The action of the electrical current on the vessels, the electrolytic decomposition of materials that can be thus acted on, have brought about results not hitherto attainable. Merely as indicating results now of daily procuring, and which, no doubt, receive full consideration in the Sections, I mention only the remarkable effects had in the treatment of pelvic congestion, inflammation and its products, of stricture of the urethra, and similar lesions. Again, in affections of the trophic system, cutaneous diseases, etc., quite a different aspect has been given them by electrical treatment. Nor should I fail to mention the quite remarkable results which have been lately achieved by the combined currents—galvano faradic.

Will my brethren who practice the obstetric art permit me to ask why post-partum hæmorrhage shall not be promptly arrested by the faradic current, instead of by ergot, friction of the abdominal walls, and other reflex stimuli intended to secure uterine contractions?

There is a vast field needing cultivation in the application of hygiene to therapeutics. The comparatively new method of the dietetic treatment of disease offers us remedial agencies which certainly approximate to exactness in method and surety in result. Time and the occasion permit me only to offer the merest hints for your serious and wise consideration.

ORIGINAL ARTICLES.

ABORTIVE TREATMENT OF TYPHOID FEVER.

Read in the Section on Practical Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, May 10, 1888.

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Much has been written in reference to the abortive treatment of typhoid fever. Most of the literature of the subject has concerned itself chiefly with the advocacy of different drugs, and the statement of clinical results obtained by them. The profession will not test these methods extensively until they are shown to rest on a rational foundation of facts of anatomy, physiology and pathology. My purpose is to make a beginning, at least, in this direction; to state the facts that should give both encouragement and direction to our efforts. While I shall not omit a statement of my method, I count it of secondary importance. The facts that have guided me to it are guiding me still, and have, I believe, still better things in store.

The difficulty of proving beyond question the success of an abortive plan of treatment of a given disease is greatly increased by the following facts: that in order to merit the name, the treatment ought to arrest the disease at an early period in its ordinary clinical history; that the symptoms pathognomonic of most diseases occur late in their course; that therefore a successful abortive treatment will arrest most

diseases before the development of symptoms that allow of a positive diagnosis, and while there is yet room for a possible doubt as to the identity of the disease whose short course we attribute to an abortive plan of treatment.

The demonstration of the success of an abortive treatment of typhoid fever presents these difficulties in an extraordinary degree, because the symptoms recognized in the past as absolutely pathognomonic all occur late in its history.

The difficulty can be overcome and an absolute demonstration reached only by the following methods:

1. Correspondence of results reached in a very large number of cases that present strong reasons in their symptoms or lineage, or both, for believing them to have been typhoid fever.
2. Post-mortem appearances obtained in the event of death from some other cause, during convalescence from what we believe to have been aborted typhoid fever.
3. A possible aid may be had by a closer study of the early symptoms, that will allow us to attach more diagnostic authority to some of them than we have in the past; perhaps, also, by new methods of research to discover new pathognomonic symptoms that occur so early as to be always present even in aborted cases.

Such observations will themselves need to demonstrate their reliability by long and repeated trial before we can use them with absolute confidence in establishing the claim of any proposed abortive treatment of the disease.

The question at once presents itself. How far have these difficulties been overcome? The reply will be found along the line of the three methods proposed for overcoming the difficulties.

A large amount of evidence has been gathered bearing upon the possibility of arresting the progress of cases giving reasonable ground, in symptoms or lineage, or both, for believing them to be typhoid fever. This evidence will have varying weight with different minds.

Our German confrères have done much, by extended observation, to establish to their own satisfaction the utility of what they are pleased to call a "specific" treatment by calomel or sodium. Niemeyer finds the argument so convincing as to state "that after the accurate observations of Wunderlich we can scarcely doubt that by this remedy (calomel) we may in some few cases cut short the disease." Sanson and Wilkes, in England, Henry, Peabody, Nelson and White, in our own country, are also among those who should be gratefully remembered for their research in this direction.

I am not aware of any published record of observations bearing upon the second method—post-mortem appearances in supposed successful cases of aborted typhoid fever, in which death may have occurred during convalescence, from some other and unrelated cause.

To the third method of a more exact determination of the significance of early symptoms, contributions are occasionally coming in, the most recent, Ehrlich's urine test, being probably also the most valuable.

The present status of the problem may perhaps be fairly stated thus: It will require the utmost diligence and care on the part of the profession for many years to come, in order to add to the extended observations of the past sufficient data to make a final settlement of the question possible.

Results already reached by observers in Germany, France, England and America afford so strong a suggestion of the possibility (some of us will perhaps say, the probability) of a favorable solution of the problem, that duty as well as interest should hold us all to careful observation and record of all facts bearing upon it. It is this double impulse that prompts me to what I have to say.

That I am not advantageously placed for original investigation, in a locality where typhoid fever is rarely seen, is doubtless true, and might justly seal my lips against attempting an argument that rested chiefly on clinical facts. It does impel me to come even to an argument based chiefly on acknowledged facts of anatomy and pathology with much modesty and with great deference to the views of those whose clinical opportunities have been greater.

Let me state briefly at the outset those conclusions to which my own mind is tending, to which I shall hope to win your assent.

1. That there is a modified form of typhoid fever, seen in localities provided with a pure water supply, whose development is *slow*, whose *earliest symptoms* are *pulmonary*, and which deserves more careful study than it has received.

2. That there are early symptoms of typhoid fever to which we may attach much, if not a pathognomonic, value, a value greater than that we were accustomed to assign them a few years ago.

3. That certain facts of anatomy and pathology point not only towards the reasonableness of methods already employed for the so-called abortive treatment, but also of adding to those methods other expedients.

4. That the cases so far observed in which these methods have been followed, though insufficient to demonstrate finally their power to abort typhoid fever, are sufficient to strongly suggest their usefulness, and to demonstrate their harmlessness.

5. That these measures have a wide application outside of typhoid fever in febrile affections, especially in those difficult to classify.

We consider first, then, the evidence of the existence of a form of typhoid fever modified by conditions frequently obtaining in communities provided with a pure water supply.

The *avenues* by which the typhoid germs gain entrance to the body are the respiratory and alimentary tracts. Lodgment in either of these tracts involves danger. Lodgment elsewhere is probably harmless.

We may well believe that the initial lesions will be different, and developed with different rapidity, according as the vehicle by which the germs enter, is the respired air or the ingesta—whether fluid or solid. In the latter case the germs mingle at once with dead organic material, and in the lower bowel with fermenting fecal material—so finding the *best* conditions for rapid development. Here, too, is found that arrangement of blood-vessels and lymphatics

which gives most favorable conditions for rapid absorption, having indeed this for its office.

Manifestly, germs entering by the respiratory tract will find much less favorable conditions both for increase and absorption, for here are in health no fermenting materials, and structure is adapted to interchange of gases rather than of fluids.

Explanation of the fact that typhoid fever may be contracted through germs presented with respired air has been offered by the statement that some of the germs lodging in the pharynx and mouth are swallowed with the saliva. We may admit as at least equally probable, that after primary infection of the bronchial mucous membrane, germs contained in phlegm which is coughed up, but fails of expectoration and is therefore swallowed, may carry infection to the alimentary tract. Pathology adds its testimony to the fact of infection through the lungs.

We can hardly fail to trace a growing tendency among recent authors to give greater prominence than before to the changes in the respiratory tract. A more or less severe bronchitis, with not infrequent enlargement of the bronchial glands, is fast gaining deserved recognition as one of the most frequent lesions. I must content myself with only three quotations from prominent authorities in support of this statement. Loomis says: "So constantly is catarrhal bronchitis present in this fever that Dr. Stokes proposed to call typhoid fever, bronchial typhus." Niemeyer says: "We find changes in the respiratory organs in all cases. The typhoid laryngeal ulcer already described is not infrequently found. There are always signs of an extensive catarrh even in the smallest bronchi, marked by dark redness of the mucous membrane, and scanty tough secretion. The bronchial glands are swollen, vascular, and occasionally have a medullary appearance, such as we shall describe for the mesenteric glands." Flint says: "The enlargement of these glands (bronchial) in some cases is considered as corresponding in pathological character to the enlarged mesenteric glands." This is a fact full of diagnostic significance for us, and of special importance where a well-protected public water supply reduces to a minimum the danger of infection from fluids through the digestive tract, and leaves open only the much smaller opportunity of infection through the respired air.

Three conclusions are inevitable from these facts:

1. That in cases where germs are received first into the respiratory tract, the early symptoms should be bronchial rather than abdominal.

2. That in such cases the symptoms should be slow in development, owing to the conditions unfavorable to rapid increase and absorption of the germs.

3. That such cases are likely to lack in their early history many of the typical symptoms of the disease, *i. e.*, to be atypical, and that room should be given for such cases in our consideration of early symptomatology and diagnosis.

We may add one more statement, *viz.*: that in communities provided with a pure water supply, this is likely to be the most frequent type of the disease, a consideration of much importance in the symptomatology.

If any question the possibility of infection through the lungs they must do it in the face of the fact that most, if not all, recent writers concede it on the double ground of clinical experience and pathological observation.

The testimony of the inflamed bronchial mucous membrane and the enlarged bronchial glands is not easily gainsaid.

SYMPTOMATOLOGY.

We turn next to symptomatology, and especially to the question whether there are early symptoms to which we need to give more prominence than in the past. Whatever concerns diagnosis may find place here, for if we are to claim abortive treatment of typhoid fever, we shall need to establish reasonable, if not positive evidence that the disease whose short course we attribute to the treatment is indeed typhoid, and therefore one whose natural history is a course of several weeks' duration.

We find ground for diagnosis of disease from:

1. Its lineage, both as regards its parentage and offspring.
2. From symptoms observed during its course.
3. From post-mortem appearances.

Typhoid fever is a disease that may give us evidence from all three sources. *Aborted* typhoid fever, except as death may come in early period of convalescence from some unrelated cause, can gather its evidence from only the first two sources, lineage and symptoms.

The discussion of diagnosis, so far as it depends upon lineage, leads immediately and necessarily to the question of etiology. Is it ever of spontaneous origin? This we have not now time to discuss, and must content ourselves with a statement of the following postulates:

1. No recent prominent writer, with possibly one exception, ventures to positively affirm the negative as more than an individual opinion.
2. All recent and prominent writers mention both views with respect.
3. The strongest opponents of the spontaneous origin have in many instances to confess their inability to trace the relationship they claim between a given case and its parent.

4. Several of the most prominent recent writers are zealous champions of the spontaneous origin of the disease from putrescent organic matter.

Loomis admits that there are strong advocates of both sides, though himself not a believer in spontaneous origin. Murchison stoutly upholds spontaneous origin. Reynolds' "System of Medicine" makes this statement, "We must therefore conclude that this disease has a spontaneous origin in putrescent matter." Wilson, while himself a dissenter, admits the weight that must be given to such an advocate as Murchison.

The latest utterance from high authority I have been able to find is that of Dr. Janeway, who, in the course of a discussion in the New York Medical Society, last fall, defined his position as one of willingness to admit the possibility of its arising *de novo* from filth fermentation, but inability to admit it as more than a possibility.

In view of these facts, are we not justified in asserting: 1. That it must be said of both views: Not proven. 2. That inability to trace a suspected case to a preceding case need not deter us from a diagnosis of typhoid fever.

Three considerations must control our discussion and practical estimate of symptoms.

1. That we have to do with a disease whose pathognomic symptoms occur late in its clinical history.
2. That its early symptoms are generally obscure and not infrequently attend other diseases.
3. That if we shall ever arrive at a successful abortive treatment we shall see only the earlier symptoms, and even these modified by this treatment. If asked to give the most characteristic symptoms, we should doubtless answer: the eruption, and abdominal symptoms of tenderness and diarrhoea, and the peculiar temperature curve. If intestinal hemorrhage is present it doubtless strongly confirms the diagnosis, but as that occurs in only one in twenty of well authenticated cases we can hardly class it among the symptoms to be expected, even in a case following the natural history of the disease. Eruption and diarrhoea rarely occur before the early part of the second week. Abdominal tenderness is often present among the earliest symptoms.

How many of the symptoms generally considered as most essential to a positive diagnosis we shall find in aborted cases, if such exist, will depend upon how early we have begun the treatment and how rapidly it proves effective.

In the cases that have fallen under my observation, eruption has not been infrequent, and abdominal tenderness quite constant. Diarrhoea has been of rare occurrence. The temperature curve we should also expect to find materially modified by successful abortive treatment, though retaining certain strong points of resemblance; quite enough to suggest, if not establish its parentage. We must, therefore, if admitting an abortive treatment, undertake a careful and correct estimate of the value of other and early symptoms.

Under the former expectant or symptomatic treatment, we found our most urgent motive to early diagnosis in prophylaxis in the interest of others than the patient. If an abortive treatment is accepted as possible, our motive is strongly reinforced by interests to be guarded in the patient's behalf, as, if successful, the treatment must begin early.

It therefore behooves us, in the future, to give the closest attention to the symptoms that will afford us, if not positive, at least reasonable, grounds for early diagnosis. A careful review of the statements of Loomis, Flint, Bartholow, Wilson, Niemeyer, and the "Systems" of Pepper and Reynolds, must lead us to assent to the following conclusions, which will also doubtless find verification in our recollection and experience:

We must limit ourselves to those symptoms that are sufficiently characteristic to be an aid in early differential diagnosis.

The onset is generally insidious. The frequency with which patients are, at first, unwilling to believe themselves seriously ill, and interpret the symptoms as those of a cold, is referred to by many writers.

Headache, often of great severity and obstinacy, but sometimes slight, is rarely absent.

Epistaxis is referred to by all writers as a usual symptom, varying from so slight a degree as almost to escape notice to profuse hemorrhages.

Tenderness of abdomen, sometimes quite general, sometimes most apparent in right iliac fossa, is universally mentioned, and if to it is added ileo-cæcal gurgling, it gains still more significance.

Constipation is probably more frequent than diarrhoea during the first week, though several writers assert a tendency to more than the usual response to a mild laxative. There remain the three symptoms which, I believe, deserve more weight than we have been accustomed to give them, viz.: cough, temperature, and Ehrlich's urine test.

Cough, at first dry and hacking, is insisted on by several writers as an aid in many cases. My own view of its importance where we may fairly infer that infection, if present, has occurred through the respiratory tract, has been sufficiently stated. I question whether the spasmodic cough often seen in such cases does not depend upon pressure of enlarged bronchial glands upon the bronchi or upon the recurrent laryngeal nerve. This view would seem to be supported not only by the character of the cough, but also by the altered physical signs at right apex that often attend such enlargement.

Flint states that "a slight or moderate cough is almost invariably present." Niemeyer says: "In most, if not all cases, the cough and mucous expectoration betray the bronchial catarrh." Wilson says: "Bronchial catarrh is of sufficiently common occurrence to acquire a certain amount of diagnostic significance." Loomis writes: "Slight bronchial catarrh can hardly be regarded as a complication, it is so much a part of the clinical history of the disease."

Temperature.—In typical cases, the well-known temperature curve is observed early in the disease, if not from its beginning, but atypical cases are so frequent that we need to inquire whether there are not other features of temperature that will afford valuable aid. This, Wilson believes, we have in a marked tendency toward a constant morning remission, and this my own observation strongly confirms, as my cases have followed this rule even during the decline of temperature resulting from treatment. How widely atypical the temperature may be is shown by the outbreak among the German troops at the siege of Paris, where many fatal cases occurred without rise of temperature. Wilson calls attention to another feature of the temperature that he deems characteristic, viz.: that it is very labile, easily elevated by trifling causes, as first solid food, etc. He also makes much of sweating as a diagnostic sign.

Ehrlich's urine-test, though perhaps needing further confirmation, promises to be most useful.

We turn next to the discussion of anatomical and pathological facts that suggest the reasonableness of methods previously advised for the so-called abortive treatment of typhoid fever, and which suggest modifications of those methods and additions to them. The facts most significant in reference to our present purpose are: the period of the disease at which the va-

rious intestinal lesions occur; the location of the areas of intestinal ulceration; the relation of the large mesenteric glands to those areas.

The period of occurrence of the intestinal lesions calls for only brief statement. Enlargement of the solitary glands may be observed as early as the third or fourth day in some instances, and continues till twelfth or fourteenth day, when ulceration begins, and may continue till the twenty-eighth day. This statement is significant chiefly as indicating the narrow limits of the period during which an abortive treatment that depends solely upon intestinal antiseptics can have any hope of proving effective.

As to *location of lesion*, the duodenum escapes ulceration; the jejunum is very rarely affected; the ileum is most frequently the sufferer, and ulcerative lesions are frequently confined to the last four feet of the ileum, while the largest ulcers are almost invariably found in the last six inches of this portion of the intestine, *i. e.*, in the part just above the ileo-cæcal valve. It is, indeed, not infrequent, in cases presenting few ulcerative lesions, to find them limited to this small portion of the intestine. In the large bowel, the most frequent seat of ulcerative lesions is in the cæcum. If found beyond that, they grow less frequent as we go downward. The important points to establish in this connection are three:

1. Tendency toward such lesion increasing in the small intestine as we recede from the point of entrance of the *bile*—an antiseptic fluid—a fact that suggests the possibility, at least, that this natural antiseptic fluid proves generally effective in the upper part of the small intestine, and that therefore the addition of another antiseptic might so far extend the effect that the entire intestinal tract should escape injury from the bacillus. It is true that it is only a suggestion of such a possibility, and not a demonstration; a suggestion, however, of such force as to make it a duty to address ourselves diligently to the task of testing the possibility by all safe means.

2. The ulcerative tendency culminates at a point remote from the point of entrance of the bile, and behind an obstruction constituted by the ileo-cæcal valve, and analogous to the obstruction afforded by a stricture of the urethra, behind which the congestion, inflammation and ulceration that maintain a gleet discharge so often intrench themselves.

3. The large intestine developing the ulcerative tendency most in the cæcum, where fecal matter is most easily long retained, and progressively less as we go toward the rectum, where evacuation of contents is most frequent and immediate.

The therapeutic significance of these facts lies chiefly in the suggestion that whatever we can safely do to reduce this natural obstructive tendency of the ileo-cæcal valve, and to keep the bowel comparatively free from long retained fecal matter, will contribute to the recovery of our patient, and to the prevention of the worst features of the disease, dependent on ulcerative lesions. That the mesenteric glands most involved are always those immediately related to the ulcerated areas, is the fact that most concerns us in their pathology; a fact that has, as yet, proved rather suggestive than productive in my own thought.

Besides these pathognomonic, pathological lesions, there are other minor ones, of not infrequent occurrence, not considered pathognomonic, and yet of perhaps greater significance than we have been accustomed to think. These changes concern the upper portion of the alimentary canal and the respiratory tracts. The large swollen tongue, indented by the teeth; the swollen lymphatic follicles in tonsils and at base of tongue, and the not infrequent ulcerations found in pharynx, œsophagus, larynx and trachea, are referred to by most recent authorities as coincident with, and analogous to, the intestinal changes. These minor lesions afford important therapeutic suggestions as to addressing an antiseptic abortive treatment to the *entire* digestive tract from mouth to anus, and if possible to the respiratory tract as well.

It is also a suggestive fact that, even when no abortive treatment is attempted, cases are not infrequently found in which the first authorities (Loomis, Pepper, Reynolds, Wilson, Bartholow) accept without question the view that the solitary and Peyer's glands, after the enlargement observed in the early period of the disease, undergo resolution without ulceration, a fact that disposes finally of the objection often advanced against abortive treatment, that if the poison once gains entrance to the system, the disease must run through all its peculiar phases both of symptoms and pathological change.

Having these suggestive facts of the pathology of the disease, let us endeavor to build upon them a reasonable

THERAPEUSIS.

The movement to find an abortive treatment for typhoid fever has arisen in connection with the theory of the intimate relation of a specific germ to the disease. That view may be now fairly regarded as established, and, if true, it is only rational for us to search for some agent with which we may directly combat the germ. Indeed, we should be lacking in our performance of duty did we, as a profession, fail to make such search most diligently. The profession have not been forgetful of this duty, and as a result, the day seems near its dawning when we can set before ourselves more rational and definite aims in our therapeutics.

A therapeutics based upon the germ theory must, in view of our present imperfect knowledge, set before itself *two* aims:

1. To destroy the germs of the disease, or arrest their development.
2. To combat the ptomaines which are developed during its course.

We consider first the conflict with germs. This conflict we may well believe must be conducted on two fields:

1. On the surface of mucous membranes with germs that have not yet entered the tissues.
2. In the tissues with germs that have gained access to them.

The first field we find in the respiratory and alimentary tract. The possibility of the application of efficient antiseptic therapeutics to the bronchial mu-

cous membrane is still open to question. Inhalation of antiseptic vapors or of oxygen, and internal administration of antiseptic drugs which are eliminated by the lungs, as, for example, eucalyptol, are as yet our best and very uncertain agents.

The alimentary tract we can deal more directly with, and through a larger variety of agents. We may approach it through two avenues—the mouth and the anus; in both cases our agents are likely to lose in effectiveness as we depart from the point of introduction, while that introduced into the rectum will be limited to the large intestine. As far down as the ileo-cæcal valve we must depend solely upon antiseptics introduced by the mouth, and our aim should be to use antiseptic measures along all the tract—mouth, œsophagus, stomach and intestine.

The mouth and throat may be reached by a mouth-wash or gargle frequently employed. The œsophagus, stomach and intestine we may consider together, as they must all be reached by some agent which is swallowed.

Would intestinal antiseptics be useful if we could effect it? We may find an affirmative answer in the following facts:

a. Even in health, a considerable portion of fecal matter consists of micrococci and micro-bacteria, and that poisonous ptomaines are developed as a result of their activity.

b. The effect of nature's disinfectant fluid in the intestine, viz.: the bile and its apparent effect in restraining development of the germ in the upper portion of the small intestine.

c. The results of clinical experience.

May we safely attempt such intestinal antiseptics? Clinical experience must here again give us our only reliable answer. That we may safely take considerable amounts of some antiseptic materials into the digestive tract is well established, and if doubt exists, it must concern the question whether these amounts are sufficient to be efficient. Fortunately, we have a test for that in the presence or absence of phenol in the urine. It is a constant product of intestinal putrefaction, and is eliminated by the urine. Dr. Henry has demonstrated that during the use of thymol phenol disappears from the urine—a proof of effective intestinal antiseptics. Perhaps no more striking proof of the possibility of intestinal antiseptics could be afforded than this action of thymol:—It does not lower temperature when no fever exists; its effect is uncertain, and at best slight, if fever is not associated with disorder of alimentary tract; it proves an active antipyretic in typhoid fever where such disturbance, dependent upon germs, is at its height. Phenol here, too, disappears from the urine during its use.

Another clinical fact going to prove intestinal antiseptics to be both possible and safe is the large class of antiseptics that are effective agents for the arrest of diarrhoea dependent on germ development. Acknowledged advocates of this view are found in large numbers among the first names in the profession.

Other agents than germicides may aid in limiting germ production in the bowel. *Evacuants* may aid us by preventing long retention of the intestinal contents. Certain facts of clinical experience are sug-

gestive of the very practical value of evacuant measures in typhoid fever. Loomis says: "A mild diarrhoea through the entire course of the fever is a favorable rather than an unfavorable symptom." "When the diarrhoea is present in the early period of the disease, it is better to let it alone." The advantage of an active laxative in the initial stage of the disease is too generally conceded to admit of doubt—an advantage shown in reduction of the number of microorganisms, and in reduction of temperature.

If opportunity of treatment is offered early in the disease, the problem of controlling development of the germs in the tissues may not be so difficult, and may not require a charging of the whole body with an antiseptic sufficient to be destructive in every part. The problem will be a simple one, if we can find special hiding and breeding places of the germ within the body, where the bacilli are rapidly developed, and from which they, or the poisonous ptomaines which they produce, or both, are poured out into the blood in increasing quantity, till its power of disposing of them is exhausted, and the whole system succumbs to their influence. That such is the fact I think we must admit, if we would give a rational explanation of the phenomena often observed.

What are these hiding and breeding places? My answer rests in part on some well-recognized facts of anatomy and physiology, and in part upon some not irrational, but I will admit theoretical, inferences from these facts. In the ordinary process of absorption from the intestine, two carriers wait in the intestinal wall to convey the nutritive products of digestion into the circulation, viz.: the capillaries and the lymphatics. Material in solution, as the peptones, enters by way of the capillaries; material in suspension, as the emulsified fat, by the lymphatics, aided, doubtless, by the peculiar structure of the epithelial cells, whose root-like processes of adenoid tissue extend to, and are continuous with, the wall of the lymph vessel in the centre of a villus. The closely packed rods on the surface of the epithelial cell first entangle the foreign body, and the amoeboid activity of the cell conducts the entangled mass along the cell tissue and its root-like processes, till it reaches the cavity of the lymph vessels, so determining its entrance into a lymphatic, rather than a capillary.

We may fairly infer that this is also the pathway of the germs, as they would correspond more to the suspended oil globules than to the dissolved peptone. A few germs, perhaps, enter the capillaries, but we may well suppose that a fluid containing as much oxygen as the blood, with which it parts readily, would be capable of promptly disposing of a small number of such germs.

On the other hand, germs received into the lymphatics find a medium much less inimical to germ development, as it contains only a slight trace of oxygen. As these pass along the lymph vessels to the point of entrance into the general circulation, they are obliged to pass through, we might almost say to be filtered through, the pulp of the mesenteric glands, and many of them would be almost inevitably entangled there, and find, if not an ideal, at least a favorable, place for development, comparatively re-

moved from oxidizing agents. Those carried on through the glands to the general circulation may be destroyed by the well-oxygenated blood.

Favorable as is the condition in the mesenteric glands for germ development, a much more favorable condition is found in the closed lymph follicles that constitute the solitary glands and Peyer's patches—entirely closed sacs, with no lymph current running through them, as have the mesenteric glands, to molest developing germs, the products of the glands escaping probably partly into the capillaries, and partly into the lymph sinuses that lie beneath them.

My view, supported, but I will admit, not proved, by the peculiar lesions of the disease, is that the germs, finding their first place of lodgment and increase in the contents of the bowel, find a second such point of lodgment and increase in the closed lymph sacs of the solitary glands and Peyer's patches and in the lymph glands of the mesentery, their rapid increase there giving rise to inflammation and enlargement of their structure, and to a constantly increasing rate of discharge into the blood, till that fluid is no longer able to destroy the germs or their products, the ptomaines, and the constitutional symptoms, characteristic of the disease, result.

If this be true it has an important bearing upon the possibility of abortive treatment. If intestinal antiseptics be possible we certainly have an early opportunity of aborting the disease, while germs are confined to the contents of the bowel.

If my view of the part played by the solitary, Peyer's and mesenteric glands be true, we have a second opportunity, after the germs have gained access to the tissues, but are practically confined in their development to these lymph structures, and the blood is yet able to dispose of such as are discharged into it. In partial support of such a view, let me quote from Loomis: "It is scarcely questioned that the typhoid poison, to a great extent, gains entrance to the system through these glands and lymphatics, and here produces the primary irritation."

This fact gives two most useful suggestions to one who aims at the abortive treatment of typhoid fever:

1. That though it were proven to be unsafe to introduce into the general circulation a germicide in quantity sufficient to be effective there, still he need not limit his antiseptic measures to the intestinal tract, but may make the effort to pursue the germs as far, at least, as their first place of hiding and increase in the tissues, viz., the lymph structures of the alimentary tract.

2. That probably the most effective agent for such pursuit would be a fatty germicide, if that can be found, or failing of that, a germicide so united with a fat that in the process of digestion it will be retained in the fat when the latter becomes emulsified, and would be so absorbed by the lymphatics, as the fat is.

It is also possible that an insoluble germicide finely triturated, might prove effective. Or, that accompanying a germicide which is soluble in fats, with a diet specially rich in fats, would gain the same result.

The prospect of obtaining a germicidal effect in these tissues would seem to be excellent, as these organs lie directly in the path of absorption from the

bowel, and as the lymph current is at best a very slow one, allowing more time for the action of a germicide in the gland tissue, before it should be carried on into the general circulation.

The structure of the spleen, closely allied as it is to that of lymph-glands, suggests that it would be likely to prove a place of hiding and increase for the germs, after they had once been thrown into the blood faster than that fluid could dispose of them, and this seems to be the case as shown by its constant enlargement, a change subsequent to that in the intestinal and mesenteric glands; and by the enormous number of the germs found there in fatal cases by microscopic examinations.

The possibility of pursuing the germs to this point turns upon the possibility of safely introducing a germicide into the blood in sufficient quantity to prove effective, unless it should be found that the spleen, tolerant as it is of some forms of hypodermic medication, should be tolerant of some effective germicide given in that way.

It appears, therefore, that there are three periods in the disease during which we may address ourselves to germicidal, and so abortive, treatment of the disease:

1. While germs are limited to contents of the intestinal tract.

2. After they have gained access to the lymph structure of the intestine and mesentery, but while the blood is yet able to dispose of all the germs thrown into it from the glands.

3. After the production of germs has passed the limit of the blood's power to destroy them, and there occurs a general infection of the body.

Manifestly the difficulty of attaining our aim increases as we advance from the first to the third of these periods.

Whether a single remedy suited to all stages can be found; and if not, what choice of remedies we had best make for each stage; whether in treating each stage later than the first, we must carry over into it the remedies of the preceding stages, are problems that will require close observation and most patient research.

So much for the first of the aims we set before us, viz., combating the germs of the disease.

The second aim is to combat their product—a ptomaine or several ptomaines, *which*, we cannot yet assert.

The ptomaines are the latest, and a most welcome and suggestive addition to our knowledge of the causes of disease. They open up a wide field for surmise and investigation, and give more promise of leading us to rational treatment of disease than has any fact brought to our notice for several years past.

A brief statement in reference to them, which will serve to freshen recollection in our thought, will not be amiss. Perhaps we may best present such a statement in the form of the following postulates:

1. As vegetable cells, by an activity peculiar to themselves, develop a material known as an alkaloid, so animal cells in normal activity develop materials known as animal alkaloids, or ptomaines.

2. That ptomaines are also developed under other

conditions, viz., in the normal processes of digestion, and under all circumstances where bacteria and putrefactive changes are active in the body.

3. That these ptomaines are numerous, the kind developed depending upon the character of the cell that produces them, the species of bacteria at work, and the stage of putrefaction.

4. That many diseases are attended with the development of a ptomaine peculiar to the disease, and which, if introduced into animals, causes promptly the development of symptoms allied to, if not identical with, the symptoms of the original disease.

5. That the ptomaines produced differ with each disease so far as investigated.

6. That these ptomaines produce symptoms affecting chiefly the heart, lungs, and cerebro-spinal system.

7. That the active agent producing the symptoms is not the germ, simply as a foreign body, but the ptomaine (or ptomaines) resulting from the growth of the germ and the changes it effects in albuminoid material of the tissue or of the intestinal contents.

8. That typhoid fever and lobar pneumonia are among these diseases.

9. That from cultivation of typhoid fever bacillus, a ptomaine has been derived which proved fatal to small animals in twenty-four hours.

10. From the urine of both typhoid fever and pneumonia patients two extracts have been obtained, either of which will produce death, but whereas one leaves the heart in diastole, the other leaves it in systole.

11. That several facts point to the conclusion that these ptomaines are thrown off by the excretions, and that such elimination, if rapid, is sometimes followed by a prompt disappearance of symptoms.

Such a fact is the sudden termination of symptoms after profuse sweating, as in intermittent malarial fever and in pneumonia. Such also is the remarkable success had in the treatment of yellow fever by hypodermic injections of $\frac{1}{5}$ to $\frac{1}{4}$ of a grain of pilocarpine muriate, reported by Dr. E. Habersmith. The profuse sweating and catharsis or emesis, or both, was followed by return to health in forty-eight hours.

This ptomaine enemy we may combat in the direction of preventing its formation, of destroying it by effecting its decomposition, by using strictly antidotal remedies and by hastening its elimination from the system. Doubtless the best, indeed perhaps only way of preventing its formation is by destroying or rendering inert the germs of disease, whether in the intestinal tract or the tissues. Therefore any germicide that we use effectively for *that* purpose will at the same time effect *this*.

The destruction of the ptomaine after it has once appeared in the system is something that we know little about, too little as yet for intelligent discussion, and we therefore dismiss it with this simple mention, and the suggestion that we may find encouragement to our effort in this direction in the fact that some at least of the ptomaines have an exceedingly unstable chemical equilibrium, and may therefore offer themselves easy victims to an agent that invites their constituents to more stable combinations.

The antidotal treatment we have probably, to a slight extent, unwittingly followed in the use of digitals for heart-failure.

Elimination of the poison we may perhaps hasten in vigorous patients by profuse sweating. The remarkable results gained by Nelson with veratrum viride are perhaps attributable, in part at least, to the drug acting in one or both of these methods. It suggests another possible advantage of keeping the large bowel free from accumulation by large enemata, in addition to those already referred to. Especially is this the case when we remember that the large intestine is in health the place of most rapid development of bacteria and formation of ptomaines, and also an organ capable of carrying on active absorption. This is a field that waits our study, and seems to offer a rich harvest to the wise and patient seeker.

Having laid this foundation of many facts of anatomy, physiology and pathology, and I hope not materially weakened it by some theoretical considerations drawn from them, I am ready to present in detail the methods of treatment I am accustomed to follow.

No precaution, in effort to procure good ventilation, pure air, proper diet and careful nursing, is omitted. In cases presenting evidences of primary infection through the respiratory tract, I have sometimes employed creosote inhalations with Beverly Robinson's oro-nasal inhaler, with apparently good results, in at least diminishing cough.

The digestive tract receives antiseptic attention throughout.

Frequent use of an antiseptic mouth wash, generally Dobell's solution with listerine added, has been only recently employed, and I do not feel justified in urging it on the ground of any positive results demonstrated yet, but on purely theoretical considerations derived from pathological facts already noted.

To this antiseptic wash is added occasional doses of $\frac{1}{10}$ gr. of hydrarg. iodid. rubr. in 1 per cent. trituration with sugar—this to be used three to six times a day, allowed to melt on the tongue, and no fluid to be taken after it for several minutes. The antiseptic effect of this is doubtless felt in the mouth, œsophagus, stomach and bowel. In order to avoid the danger of salivation this is not used after the second or third day, unless very infrequently.

The main dependence for intestinal antiseptics as far as the ileo-cæcal valve, is sodium salicylate in doses of 10 grains every two to three hours, given either in capsules or Wyeth's compressed tablets. I am well aware that it has been pronounced by some high authorities to be not only useless, but also positively injurious; attention has been called to the fact that it is eliminated by the kidneys and may irritate those organs. I am grateful for the suggestion, and always watch the urine of my patients closely, while using it, but have yet to meet any unpleasant result from its use. The same may be said of the statement that it depresses the heart, diminishes respiratory movements, causes gastric disturbances, increases diarrhœa and tendency to hæmorrhage. I have watched for, but have not observed them, as in any way troublesome results. The only precautions

in methods of administration that I have found necessary, have been to take a few swallows of some fluid nourishment before the capsules, and the addition, in some cases where the patient's circulation is poor even in health, of a few small doses of tr. digitalis.

There is a large class of available antiseptics. I have used sodium salicylate not because I know it to be the best, but because I found it safe and efficient. Other agents that call for very favorable mention are Dujardin-Beaumetz's solution of carbon bisulphide, thymol urged by Dr. Henry, *beta*-naphthol advocated by Dr. Bouchard; naphthalin advocated by Dr. Peabody seems to have a good record. In using it we need, however, to remember that it is objectionable in cases in which lung symptoms are prominent. In well selected cases I am disposed to think it may prove more effective than sod. salicylat., as Dr. Peabody finds it reduces temperature to normal in 24 to 48 hours, a more prompt result than I dare claim for the soda salt.

Salol I have been led to be suspicious of, as, if used in sufficient quantity it needs to be closely watched in reference to its effect upon the kidneys. Two 10 grain doses have, in my experience, once caused suppression of urine.

The iodine carbolic acid of Dr. Sansom, of London, also advocated by Bartholow, has in my hands proved very disagreeable to patients, and much less efficient than sodium salicylate.

Sulphurous acid, much praised by some, and the phenic acid treatment of Dr. Déclat, have served me well in a few cases, but not as satisfactorily as the sodium salicylate.

My third therapeutic agent is calomel, given in one large dose at the outset, if the case is seen before a free diarrhœa has set in. If seen later on, a dose of equal parts of castor oil and syr. rhei has the preference, as an efficient but soothing laxative, which tends to limit its own action. If abdominal palpation and percussion give no sign of accumulation in the bowel, even this would be omitted in cases with free diarrhœa. The use of laxatives in the disease has been much inveighed against. In Reynolds' System we find the statement, "Calomel should be avoided, its action is too irritant." One cannot but wonder, prior to personal experience, whether the danger is not overstated by authority, when reading of the results gained by the Germans, as shown by statistics covering hundreds of cases, and of Dr. Bartholow's large confirmatory experience. We will rather assent to the statement of that sage among medical teachers, Dr. Loonis, who says: "The greatest caution must be observed in the use of cathartics in any stage of the fever." The German mortality, reduced from 13.2 per cent. by the expectant treatment to 8.8 per cent. by an active calomel treatment continued during the first week, may go far towards relieving our minds of apprehensions of evil effects from one full dose at the outset. Bartholow comes strongly to our support with advocacy of $\frac{7}{8}$ to 10 grain doses every alternate night till the third or fourth day. Dr. Peabody, who believes that for two years past he has aborted many cases coming

under observation during the first ten days of the disease, employs as an initial measure a 10 grain dose of calomel. Niemeyer, Liebermeister and Wunderlich also lend the support of their strong names to the treatment.

Apart from my own confirmatory experience, I cannot but conclude from the testimony of others that the measure is at once safe and useful. I remember to have heard Dr. Fordyce Barker give his approval to such an initial dose as a wise rule.

My evacuant agent for the remaining course of the disease, after this initial dose of calomel, or castor-oil and rhubarb, and also my chief reliance from beginning to end of the disease for an antiseptic agent below the ileo-caecal valve, is a daily large enema of an improvised decoction of chamomile flowers and borax. The nurse is instructed to add a small handful of chamomile flowers to 3 pints of water, and allow it to simmer, without boiling, on the stove for one hour; then to strain it through cheese-cloth to remove any woody fibre that might prove irritating; add a teaspoonful of borax and administer as an enema, giving all that the patient can be persuaded to take. At the second or third using, if not from the outset, an adult will generally take all. Retention for a few minutes is not essential, but doubtless increases the beneficial effect. At times, no little tact is required to induce the patient to take the necessary amount. In difficult cases, the Sims position, and momentary pauses in the administration, will facilitate the process. A slight amount of discomfort during the giving of the enema is not unusual, but need not deter us.

Some writers give urgent warning against the use of such enemata. Wilson says: "Large enemata are attended with danger arising from their liability to set up energetic peristaltic movements which may extend to the lower part of the ileum." "The constipation of enteric fever is most safely treated by the daily administration of small enemata of strong warm soap-suds or of thin gruel." Much of the acknowledged force of this argument as applied to advanced cases in which there is a probability of ulceration having occurred, is lost, when we apply the treatment in the early history of the case, where the abortive treatment has its best opportunity.

In treating advanced cases the size of the enemata should be reduced. The advantage of it in early treatment is enhanced by the "peristalsis extending to the lower part of the ileum," as the measure proves in that way not only an evacuant agent for the large bowel, so removing obstruction from before the faecal matter lying just above the ileo-caecal valve, but also as an active evacuant of this matter in the lower portion of the ileum, at the point of most frequent ulceration.

The vast importance of any agent that will give safely a daily evacuation of the material tending to collect here, so preventing not only the irritation resulting from such collection and retention and consequent fermentation in the early history of the disease, but greatly diminishing the amount of absorption of ptomaines and septic material likely to occur through the abraded surfaces of the ulcers—the im-

portance of such an agent is, I believe, incalculable. We may, perhaps, give emphasis to it by calling to mind the fact that, while the bladder in health allows of almost no absorption, in diseased conditions resulting in ulceration some topical applications have to be most cautiously used, in order to guard against the danger of absorption through the abraded surfaces.

Another consideration adds to our estimate of the value of this and of intestinal antiseptics carried on *per os*: Wilson has pointed out most clearly that the fever has two distinct movements: the first or primary fever, due to specific germ infection; the second, an irritation, or hectic fever from ulcerations, sloughing and resorption. Even if the impossibility of destroying or retarding development of the specific germs in the intestinal tract or the tissues, or of combating the ptomaine which appears coincidentally with their development and activity, should be demonstrated, there yet remains here, in conflict with the causes of this septic fever, a large field for abortive treatment of typhoid fever. We might well hope to limit the symptoms to the type represented in the class of cases grouped by most writers under the head of abortive typhoid, in which, from failure of the enlarged solitary glands and Peyer's patches to ulcerate, we have the course of the fever limited to that due to specific germ infection.

The chamomile and borax I have employed, not because it is necessarily the best, but it is simple and seems to be efficient. It combines in each of its constituents agents that are mildly antiseptic and astringent. Stronger antiseptic solutions could doubtless be safely used. In future cases I shall be disposed to use the solution of carbon bisulphide, recommended by Dujardin-Beaumetz. He says of it: "For six months I have been giving this carbon bisulphide water in typhoid fevers in doses of from 5 to 10 tablespoonfuls a day according to the intensity of the diarrhoea, and I have obtained most satisfactory results from the point of view of intestinal antiseptics. Nor have I seen any untoward accidents from its employment. It has proved to be possessed of efficacy above all other medicaments." It is true he mentions its use by the stomach alone, but I should not hesitate to use it largely diluted as an enema, as well as *per os*.

Other promising therapeutic agents for enemata are oxygenated water, solution of peroxide of hydrogen and, as supplementarily to, rather than substitute for, fluid enemata, gaseous enemata of oxygen.

This is the treatment that I commend to your favorable consideration. It is *new* only in the particulars of attempted antiseptics extending through the entire alimentary tract and to the lungs, and in the use of large and antiseptic daily enemata.

Does this treatment abort typhoid fever? I cannot answer positively, because, as we have seen, typhoid fever rarely, if ever, admits of an early positive diagnosis. I believe that it does:

1. Because the method commends itself to me as rational, and not unlikely to give such a result.
2. Because competent observers are persuaded that by like means—less the enemata, which I believe to be a most potent agent—they have frequently aborted

pronounced cases of the disease (Peabody, Henry, Sansom).

3. Because my own experience is sufficient alone to justify such a conclusion to my own mind.

It must be a matter largely of judgment, and therefore I cannot find fault with those that dissent. I have grown familiar with the answer that many objectors make to the second and third reasons offered for "the faith that is in me." "There was an error in diagnosis; the cases, if arrested, were certainly not typhoid." I heard it first from Dr. Alonzo Clark in the course of one of his lectures on typhoid fever. "Gentlemen, if you arrest a fever you have diagnosed as typhoid, that fact is proof of your error in diagnosis." I question whether the day is not passed when fair-minded men will venture to assert that as more than an opinion. I trust the argument, with such record of the experience of others as I have been able to offer, would commend itself to you for trial, without evidence from my own experience.

I have already so far trespassed upon your time that I am impelled to offer only a few illustrative cases to meet the demand of this practical time, that asks every one who advances a theory to establish it by evidence. The demand is perhaps more reasonable, since the method has some new features, clinical evidence of the value of which cannot be had as yet, unless offered by my cases. As the early positive diagnosis of typhoid fever is of at least questionable possibility, I will narrate the symptoms and leave each one to draw his own inferences. One group of seven cases in the same family, using the public water supply, which was doubtless pure, so that we might look for infection through respired air, will be representative.

First Patient.—Young man, much indisposed for over a week before I saw him. Severe cough which did not yield to ordinary remedies. Seen December 25. Frequent chills through the night; temperature 102° ; headache; marked abdominal tenderness, most marked in right iliac fossa, with moderate tympanites and distinct gurgling. Eruption on abdomen fourth day after seen. No looseness of bowels. Morning temperature 2.5° less than evening. Temperature steadily declined during treatment; normal on sixth day.

Second and third cases taken ill December 30, five days after the first was seen. No. 2 had no marked chill. First temperature observed 101.3° ; headache; nose-bleed. Eruption on abdomen (three spots) the fifth day after treatment was begun; tenderness over abdomen quite general, most marked in right iliac fossa; gurgling slight; marked morning remission; temperature normal on fifth day.

No. 3. No distinct chill, but frequent chilly sensations, headache, nose bleed, slight abdominal tenderness, spots of pneumonia; highest temperature 104° . Temperature had fallen nearly to normal on sixth day, when pneumonia set in; confined to bed for two weeks, no eruption observed.

Case 4.—Chill; temperature 102.5° ; marked abdominal tenderness, tympanites and gurgling; nose bleed every day. This patient was ordinarily subject to nose bleed once in a week or ten days, but

had never before suffered from it with such frequency. Temperature normal on fifth day.

Case 5.—Severe chill; marked tenderness of right iliac fossa with moderate tympanites; highest temperature observed 102.75° ; headache; no eruption. Temperature normal on sixth day.

Case 6.—Headache severe; no nose bleed, no abdominal tenderness or gurgling, no eruption. On bed but not undressed most of three or four days. Highest temperature observed 100.75° . Normal on the fourth day.

Case 7.—Suffered least; no chill, no abdominal tenderness, headache, no nose bleed; temperature 100.5° . No eruption. Normal temperature on fourth day. A partial explanation of the lightness of the symptoms in the last two cases may be that they had been previously using 1 per cent. trituration of hydrarg. ioid. rubr. as a prophylactic measure.

The temperature of all showed a marked morning remission, and all felt, during and after the fever, a degree of prostration out of proportion to the other symptoms. Enlargement of spleen was marked in No. 1 and slight in No. 2. All had a troublesome cough, as might be expected, considering the probable avenue of infection, the lungs. Nos. 1 and 2 sweat profusely during convalescence.

Case 8.—The patient was exposed to typhoid fever during his care of a friend who died with well-marked symptoms of the disease, viz., headache, epistaxis, tympanitis, abdominal tenderness, ileo-cæcal gurgling, diarrhoea, and as typical an eruption of typhoid fever as it has ever fallen to my lot to see.

The friend was not under my care, but I saw him a few times at the request of his physician. Careless attention of those nursing him left his linen often soiled with the discharge, and the air of the sick-room foul.

The person who later became my patient laid out the body of his friend and complained bitterly of the foulness of the body and linen. Eight days later he suffered from serious malaise, chilliness, and slight headache, but did not call medical aid for a week, during which time his symptoms grew constantly worse, and thirst, feverishness, abdominal tenderness and entire loss of appetite, developed. When I first saw him temperature was 104° . Headache intense, abdominal symptoms of tympanitis, tenderness and gurgling well developed, and patient had had epistaxis. Next day eruption on abdomen appeared. Temperature steadily declined to normal on fifth day.

Case 9 also assisted about the patient who died, and had symptoms corresponding nearly in time of development with Case 8, but of less severity—viz., quite pronounced chill, headache, temperature 102.6° , abdominal tenderness, pain and tympanitis with ileo-cæcal gurgling, but no eruption. Seen at same date as preceding. Temperature normal on fourth day. Both 8 and 9 had slight, dry cough.

Case 10 occurred in a locality where well-marked cases existed at same time. Patient was seen on third day of decided symptoms. Temperature 103.4° , severe headache, dull countenance, epistaxis very slight, abdominal distension and tenderness, bowels

constipated, eruption appeared distinctly one week after first observation. Patient was at times slightly delirious. Temperature declined to normal on twelfth day. I might multiply cases did time allow.

The objection will doubtless be raised that the leading hospitals have tested and discarded as useless the abortive treatment of typhoid fever. To this two replies at once suggest themselves:

1. That typhoid patients are rarely received into a hospital till the disease has passed beyond the period best adapted to an abortive plan of treatment.

2. That the methods thus far tried have lacked what I believe to be a most essential factor, viz.: the large antiseptic and astringent enemata.

I can hardly close without commending the treatment as remarkably effective in the irregular forms of fever, dependent, as doubtless many of them are, upon germs and resulting ptomaines. What I would specially urge is not the use of *sod. salicylate* by the mouth, or of borax and chamomile by enema, or of creasote vapor for inhalation, but of some efficient antiseptic by all these methods.

The statements of Drs. Peabody and White lead me to think it not unlikely that later trial of naphthaline and sulphurous acid may change the estimates of their value, derived from a few cases in my own experience.

Permanent reduction of typhoid temperature to normal in 24 to 48 hours, which they report, I have not yet seen in well-marked cases by the use of *sod. salicylat*. It is most earnestly to be hoped that these gentlemen will give us more detailed accounts of their methods and results.

What agent or agents will prove best can be shown only by long-continued and most careful tests. That the results already reached put upon us all the duty of aiding in the settlement of the question, is a conviction that, individually, I cannot escape.

Wilson states that "typhoid fever destroys more lives that could be saved than any other acute disease whatever. We that accept the abortive treatment of the disease, as he does not, repeat the statement with an added and sad emphasis, and find ourselves urgently impelled to persuade all to test a measure in our thought so full of promise. No problem more occupies the thought of the profession to day, none so busies its laboratories with earnest research, none give such promise of yielding for us better therapeutic resources and for our patients a more certain recovery from disease.

It behooves us to take a part in the movement—at least to study closely its results and if possible to contribute to them.

I append an instructive letter from Dr. Horace C. White, and would also refer the reader to Dr. Peabody's statement of his own and his friend's experience, as given in the published proceedings of the Association of American Physicians.

Ehrlich's urine test is admirably stated by Dr. A. Jacobi, in the same transactions.

Dear Doctor.—In answer to your request for a statement of my experience in the abortive treatment of typhoid fever by the use of sulphurous acid, I am obliged to write only a hasty reply.

The *British Medical Journal*, of Dec. 3, 1876, contained an

article on the administration of sulphurous acid in typhoid fever, by G. Wilks, of Ashford, Kent, in which after giving his experience in its use he says: "I will state distinctly what I claim for the sulphurous acid in typhoid fever: that it arrests the further development of the fever poison, and by continuing this arrest long enough, exterminates the fever. Briefly, it is an antidote."

In 1871, I began the use of this remedy when practicing in Maine, in a locality where typhoid was prevalent and severe. My expectation was more than realized, and my results would justify the claims of Dr. Wilks, in nearly every case. I have continued to use it for the past 16 or 17 years and have lost none of my confidence in it.

Since my removal to the suburbs of Boston where we have much less typhoid fever, I have used it very extensively in scarlatina, diphtheria and kindred diseases, with equally good results. In fact, there is no remedy that I feel more confidence in prescribing than this. It has never failed me in but one case of scarlatina, and I lost no confidence in the remedy in that case, as the child was already in *articulo moris* when I was called. It has never failed me in diphtheria, except in a very few cases which were complicated with croup, or in other words, where the membrane was located far down the trachea.

I know these are strong statements, but I think I have used the medicine long enough (nearly 17 years) to have been able to have eliminated the enthusiasm which attaches itself to a new remedy.

And now allow me to answer the question: Why is not the sulphurous acid as potent a remedy in the hands of others as it has been in mine? The answer to this question is not difficult. 1st. A misconception of what the medicine is. What is labeled sulphurous acid, is a solution of sulphurous acid gas in water. Being chemically SO_2 , it is often supposed to change to sulphuric acid SO_3 by exposure. This is not so. In fact, it is difficult to change SO_2 to SO_3 , but when left in a partly filled, or not sealed bottle, the gas escapes, leaving an almost inert substance. As a consequence, prescriptions are seldom filled with the medicine of proper strength, unless the druggist is accustomed to its use. I have had no small amount of trouble on this account even with those we generally consider very reliable druggists. In fact, I seldom get the medicine of proper strength on prescription until the druggist has been labored with.

2d. My confidence in the remedy and in its safety leads me to prescribe it freely and also to disinfect the rooms at least twice a day with the gas by burning sulphur, believing that if the germs of disease can be destroyed by fumigation, as has been the practice for many years, that the air can be kept free from germs or sterilized by frequent use of the gas.

But I am wandering from the subject. In typhoid fever, when called early, I expect a decided remission of the fever in from 24 to 48 hours, and the fever is kept a very mild type if not completely aborted ever after. I give it mixed with syrup and diluted with water, also by inhalation. I will close this hastily written letter by quoting the closing words of Dr. Wilks' paper: "Very possibly, I have failed to convince you of the advantages of using this drug; but let me again remind you of the plain fact that of 173 cases of this fever occurring in our practice during the past fourteen months, two only died, and those two did not take the acid; for the one it was not prescribed, the other was a drunkard and would take nothing. Of the 171 who took sulphurous acid not one lost his life, and there were few who were not convalescent within fifteen days of commencing the treatment. Surely such a result will induce you to try the medicine for yourselves when opportunity offers."

Very sincerely yours,

HORACE C. WHITE.

THE CASE OF THE EMPEROR OF GERMANY.

Expediency in Diagnosis—Would it Legitimately Guide the Treatment?

BY HENRY FRASER CAMPBELL, M.D.,

OF AUGUSTA, GA.

The momentous case of Frederick, Emperor of Germany, which for many months has called forth

the tender sympathy and inspired the fervent prayers of benevolent hearts throughout the civilized world, recalls to mind one in my own experience; and I am moved to report its incidents from notes accurately taken at the time.

The principal interest and turning point in this case rested, as will be seen, upon a change of diagnosis accepted in despair, to replace a verdict which, though based upon apparently the most reliable data and rational conclusions, had still served to lead the attendants unhappily away from the course of medication imperatively demanded. The measure of rejecting the more rational view because hopeless, and of being guided in treatment by a questionable one on account of its bright promise of a happy result, would hardly be acceptable as to its logic; but such "perversity in diagnosis" may sometimes be regarded as expedient in practice.

In 1874 I was called to visit in consultation with two of my colleagues, both distinguished for their accuracy in diagnosis and long known as teachers of pathology, Mr. D. H. W., aged 30 years. I found the patient in a condition of great emaciation and feebleness from deficient nutrition, being unable to take adequate food on account of the distress at all efforts at deglutition. Aphonia was complete. He could with difficulty express himself in whispers.

The cutaneous surface was free from macule and from all eruptive or other morbid manifestations of any kind, nor had there appeared any cutaneous affection at any period in the history of the case. He was free from nausea, and the digestive organs were apparently otherwise intact under the digestion of fluid nutriment. His sleep was often interfered with by irritative cough resulting in an expectoration which was purulent in character. His respiration was oppressed, and the attacks of dyspnea had recently become more alarming and frequent.

Exploration of the fauces discovered a reddened and tumid condition of the pharyngeal walls with enlarged and prominent follicles, and here and there small patches of superficial ulceration covered with a thin deposit of grayish matter.

At the time of the conference the condition of the patient generally and the extreme irritability of the fauces, precluded the use of the laryngoscope; but previous examinations with this instrument were reported to have revealed tumefaction of the glottis with narrowing of the rima and a thickened and stiffened condition of the vocal cords—no tubercle elevations within the larynx were reported as the result of this exploration. There were no glandular enlargements in the submaxillary space or in any other part of the cervical region.

For nearly a year past this young man had been subject to soreness and discomfort of the throat, with cough and increasing hoarseness. He was free from fever at the time of this examination.

At the time of the conference the patient had but recently returned from a health resort, where systematic treatment had been interrupted. This treatment formerly consisted in codliver-oil, tonics, and nourishing fluid diet constitutionally, and locally by astringent and alterative gargles—the affected surface

of the pharyngeal wall had been brushed with a mild solution of bichloride of mercury.

While in attendance upon another member of the family, this case had been confidently reported to me as one of "cancer of the throat." It was further stated that this was the diagnosis of the attending physicians, and that their prognosis was entirely unfavorable.

From the fact that no history of syphilis could be developed in connection with this case, and also from the exemplary character of the patient as well as from the unquestionable sincerity and candor of his statements, taken in connection with the somewhat aberrant and unusual assemblage and order of symptoms, the two eminent gentlemen in attendance had entirely excluded syphilis from the diagnosis, and consequently from the measures of treatment.

I was asked, "Upon what grounds do you propose constitutional treatment in the present case?" I replied, "Certainly not upon a well assured diagnosis of syphilis, but a different diagnosis, whether of scrofula or cancer, condemns him to despair now, and to death in a few months—on the other hand to admit the suspicion of syphilis as an element in the etiology, opens to him light and hope and a possibility of restoration to health and a vigorous manhood." My diagnosis was but little more than a doubt of the expressed opinion of the attending physicians—I simply proposed to give the patient the benefit of that doubt as his sole chance of life.

I was courteously requested to formulate such measures of systematic treatment as I thought proper to propose. Without accepting formal charge of the patient, I suggested the following treatment:

R Ferri et potasse tart. 5vi.
Syrupi. 5viii.

R Potass. Iodidi. 5vi.
Elixir. simplicis (vel aque). 5viii.

S. Take one or two teaspoonfuls from each vial three times a day in half a glass of water, before or after meals.

It was recommended that the mixture be taken through a glass tube, to avoid staining the teeth. The following was also recommended:

R Potassii chlorat. 5ij.
Aque destill. Oj.

S. Use as a gargle frequently during the day.

Such fluid nourishment as could be ingested was to be taken freely. In case of failure of deglutition, particular directions were given for supporting the patient by rectal nutrition; if necessary, the medicines were to be administered by the same process. A mild mercurial course was advised to be combined, somewhat later, with the above modification of the iodide element of what is known as "the mixed treatment" for constitutional syphilis.

Ricord has been quoted as saying of tartrate of iron and potassa, that it is the sworn enemy of phagedena. I have found it for thirty years the sworn enemy of the suppurative process as well, under certain conditions; and during that entire period I have seldom prescribed iodide of potassium in certain forms of constitutional syphilis without combining it with this particular one of the ferric salts. It is to

this combination I refer when I speak of a modification of the mixed treatment.

Not recognizing at the time of the consultation that this patient had been formally relinquished into my hands for treatment, I did not see him for over twenty days from the time of my first visit. At this time I received a note from the patient, informing me that he was better, and desired to know if I wished any change in the medicines, as he had finished that prepared by the first prescription.

Greatly gratified at the intelligence that anything at all favorable had followed in so short a time as the result of medication in a case apparently so nearly hopeless, I at once went to see the patient. I certainly was not prepared for the marvellous improvement. His complexion was greatly improved; he had evidently gained flesh; had entirely recovered his voice, and was cheerful and even sprightly in his demeanor. He stated that his appetite was good, and that for the past five or six days he had been able to take solid food with little or no discomfort. The cough and expectoration had greatly abated, and on examination of the fauces the ulcerations were found to be greatly diminished, and had assumed a more healthful appearance; while the prominent and tumid follicles had regained nearly their natural appearance. The former prescription was renewed, and at a subsequent period the iodide of potassium and tartrate of iron mixture was reduced to two doses a day—morning and noon—while there was added to the treatment $\frac{1}{8}$ of a grain of protiodide of mercury, to be taken at bedtime.

It is not my design to detail the subsequent history of this anomalous case of syphilis, nor that of many others of a clearly recognizable character affecting the air passages, under my observation and within my experience. For ten years after the date of treatment he was in robust physical health, nor has there appeared at any time the slightest manifestation of the disease of the larynx or fauces.

With all our illumination on the nature of constitutional syphilis and the rules established for its indisputable recognition as well as curative treatment, there still remain many abnormal and obscure conditions, of which almost every practitioner of extended observation or protracted experience can readily recall one or more instances. The entire absence of history, either in heredity or in direct acquirement; the unimpeachable and immaculate character of the patient, together with their irregular and aberrant presentation of symptoms, all combine to add to the obscurity and inscrutableness of the complex phenomena.

In cases so obscured, it is well known that systematic treatment based on suspicion has come to be recognized as a legitimate means of arriving at a correct and assured diagnosis.

In the case above summarily reported, this device—in the face of a difficult, and withal a misleading, interpretation—was all that was left upon which to develop a true diagnosis or a fragment of hope for the patient.

Although purity or impurity of character is generally unavoidably taken into the estimate of probab-

ilities contributing to the establishment of the diagnosis in syphilis, we may say that the time is long past when in the mind of the enlightened physician, or even in the estimation of intelligent communities, the existence of constitutional syphilis, even in its most indubitable manifestations, can be regarded as necessarily an aspersion of the virtue or morality of the individual so affected.

Besides impure sexual relations and heredity, how varied and multitudinous are the methods and avenues of its transmission: The cigar, the smoking pipe, the drinking cup—whether in times of peace upon the great highways of travel, or during war in the emergencies of the field or in camps, often must become the common chalice of refreshment for officer and common soldier, from the lowest to the highest in rank. These are some of the means, reasonable and probable, by which inoculation of syphilitic stomatitis may infect the entire system of the thirsty and the unwary.

It would scarcely be considered legitimate to accept or to deny any of the varying opinions as to the exact nature of the disease expressed by the attendants of the Emperor, all of the highest rank as specialists and diagnosticians; these have been made public through authentic bulletins: cancer, scrofula, perichondritis, have each had their turn in occupying the minds of all who read and contemplate these announcements of his constantly varying condition. All agree upon the saddening recognition of his imminent danger, if not of his near and rapidly progressive approach to death. Besides the natural advance of the disease—whether scrofula, cancer or syphilis—death may come to him suddenly, by the rupture of an abscess into the trachea, or by some unavoidable accident attending even the most skilful removal and replacement of the tube. Progressive improvement seems little thought of in his present condition; a reprieve of a few days gives temporary hope, which in its turn is dashed by the recurrence of abscesses, fever, and intense alarm.

It is in this condition of the sufferer upon whom all eyes are turned, and at whose restoration all would rejoice, that I have ventured at this time to discuss that which is perhaps as yet not a fully accepted policy in the guidance to treatment. This I have described in connection with the case above reported and also illustrating this principle. Expediency in diagnosis—that is, to select from the several theories of the disease that which is most hopeful, and allow this diagnosis—perversely, if you please, even though not the most logical—to become the guide to treatment.

Cancer is incurable; scrofula in such advanced condition is also incurable; syphilis, even in its most deplorable advance, is often amenable to treatment, and complete restoration possible. Then why not let expediency guide the treatment? This, then, I would explain, is what is meant by *expediency in diagnosis*.

April 28, 1888.

MEDICAL PROGRESS.

CEREBRAL SYMPTOMS OF PNEUMONIA IN CHILDREN.—DR. L. EMMETT HOLT read a paper before the Medical Society of the County of New York on March 26, in which he drew the following conclusions:

1. Cerebral symptoms in the pneumonia of children were very common.
2. Convulsions belonged almost without exception to infancy, being rarely met with after the age of 2 years. Occurring at the onset, they belonged essentially to lobar pneumonia; they did not indicate a bad prognosis, nor even in most cases a severe attack. When late convulsions came on, death within twenty-four hours might confidently be predicted.
3. Delirium came oftenest between the ages of 5 and 8, usually in conjunction with extensive disease and high temperature. These cases, although severe, with but few exceptions ended in recovery.
4. There was no such intimate association between cerebral symptoms and apex disease as had been frequently stated. Such symptoms occurred in only about one-fifth of the apex cases.
5. Nervous symptoms occurred much more frequently when the disease was extensive and the temperature very high. He emphasized two points in treatment: First, that in the hyperpyrexia of pneumonia the cold pack was a safe and the most efficient means of reducing the temperature. Second, the use of antipyrin to allay restlessness, quiet delirium and cough, and promote sleep. Doses of 2 or 3 grs. were sufficient in an infant of from 6 to 9 months. It might be repeated every six or eight hours.

DR. ANDREW H. SMITH thought, with regard to the immediate cause of the cerebral symptoms in pneumonia, that the cases might be divided into three classes: 1. Those in which the cerebral symptoms were brought about by the direct influence of the pneumonic poison. 2. Those in which they resulted from high temperature. 3. Those in which they resulted from exhaustion. He regarded lobar pneumonia as an infectious disease, and as likely to be ushered in by cerebral symptoms, like other infectious diseases. The convulsion in children corresponded to the chill in adults. There might be apparently broncho-pneumonia, yet associated with it might be isolated spots of the croupous variety. Convulsions were in some instances associated with exhaustion. He was inclined to ascribe delirium in most cases to high temperature. Then there was a group of cerebral symptoms more or less of a typhoid character which occurred in the later stage, and were the result of exhaustion. He thought kidney complications might cause cerebral symptoms in some cases. Gastro-intestinal disturbances also produced their share of cerebral symptoms. He agreed with Dr. Holt regarding the beneficial effects of small doses of antipyrin in subduing restlessness and insomnia.—*N. Y. Med. Jour.*, May 26, 1888.

SALICYLATE OF SODIUM IN TONSILLITIS.—MR. CHAS. GRABHAM, says until recently I was not aware that the virtues of this salt in this painful and obscure disease were not more generally known to the

profession. I myself have used it for eight years, and I certainly must have seen reports of cases so treated in the medical literature of the day, before so doing. There can be no doubt of its efficacy in preventing an attack of quinsy from running its usual course. I have treated more than a hundred cases with it, and in the great majority speedy resolution has taken place; in most of those cases which went on to suppuration the remedy had either not been given early enough, or the doses had not been large enough, nor given with sufficient frequency—a most important point where salicylate of sodium is employed, whether in acute rheumatism or tonsillitis. In incipient cases, and especially those occurring in gouty or rheumatic habits, this drug acts like a charm. I give to an adult from 10 to 20 grains every two hours, or 10 grains every hour until relief is afforded, and then the dose is gradually reduced. I eschew all astringent gargles, and direct the patient to use hot milk and water ones, or when the breath is very foetid, warm gargles of permanganate of potassium, or hyposulphite of sodium. In cases where the patient has had several attacks of the disease, small doses do no good at all, and even large ones sometimes fail. Nearly all my failures have been in this class of cases.

A few years ago the attention of the profession was called to the wonderfully successful results obtained by treating tonsillitis with bicarbonate of sodium, in doses of from 10 to 20 grains every two or three hours. I have been trying it in some of those cases where the salicylate has failed, and although I have no extended knowledge of its effects, I feel justified in saying that it appears equal to the latter in subduing the inflammatory action, and preventing suppuration, besides being free from the tendency of salicylate of sodium to produce tinnitus, vertigo, and deafness. In the case of a gentleman, aged 34 years, who told me he "had spent the last six years of his life in getting quinsy and getting rid of it," and in whose case the salicylate had failed, I advised him to take 10 grains of the bicarbonate every hour as soon as he felt an attack impending, with the result that several have been rendered abortive.—*Practitioner*, May, 1888.

INTRAPLEURAL INJECTIONS OF STERILIZED AIR IN THE TREATMENT OF PNEUMO-THORAX.—Much interest has been aroused over the presentation by PROFESSOR POTAIN, before the Académie de Médecine, of a patient whom he had cured of pneumo-thorax by the injection of sterilized air. Such a statement seems at first paradoxical, but an account of the case explains it. The patient, 23 years of age, suffering from incipient phthisis, was suddenly attacked with fever, which lasted fourteen days and was accompanied with extensive pleuritic effusion, accompanied, at first, with air in the pleural cavity. As the effusion increased the lung became compressed, and the opening connecting it with the pleura was closed. The effusion finally reached the fossa supraspinata, and the patient's condition called for interference. If the effusion were withdrawn, however, it was thought probable that the connection with the lung

would be opened, and the pneumo-thorax would reappear. Professor Potain therefore devised an apparatus, in the shape of a double cannula connected with a manometer, by which, as fast as the liquid was withdrawn, sterilized air took its place. The air was sterilized by being passed through cotton and then through a strong solution of carbolic acid. During the next three months the fluid, which was slightly purulent from the first, was withdrawn twice more. The amounts removed were 1,400, 1,600, and 500 cubic centimetres. The patient gradually improved, his original pneumo-thorax did not return, and even his tuberculous symptoms disappeared, so that he was discharged cured. Two other cases were treated in a similar manner, one being cured and the other improved.

Professor Potain thinks that his results quite justify him in recommending this new procedure in appropriate cases. It allows one safely to remove a large amount of liquid from the pleural cavity, and thus obviate the danger of repeated evacuations and of producing congestion and rupture of the lungs from sudden expansion.

The prognosis of pneumo-thorax ordinarily is very bad. Among 46 cases of tuberculous origin collected by Professor West, of Heidelberg, 44 died and 2 were cured. Among 11 previous cases of this disease observed by Potain, 8 died and 3 were cured—*Medical Record*, May 26, 1888.

PECULIAR EFFECTS FROM A BELLADONNA PLASTER. DR. J. E. HORN reports, in the *Cincinnati Lancet-Clinic*, the following results from a belladonna plaster which was applied for the relief of the soreness resulting from a severe contusion: "It was on about thirty hours, and because of the burning it produced the patient removed it, and a vesicated spot the size of the plaster was visible. Two days later I was called in and given a good scolding. On looking at the arm I was actually frightened; the denuded surface was of a deep, angry red, and a scarlet hue extending from its edges in every direction. The arm was swollen all the skin would hold from shoulder to elbow, even extending to the fingers and hand, but not so great below the elbow. In fact, I had an extensive inflammation almost resembling erysipelas. The patient complained of dryness of the throat, and had double vision. The inflammation remained about one thing for three days, and then began to gradually subside. I have known belladonna plasters to irritate, but never saw anything like this, even when a vesicant had been applied."

COCAINE IN LITHOTRITY.—In a case in which an attempt to perform lithotripsy proved futile on account of the extreme irritability of the bladder and the prostrate condition of the patient, Dr. Phélip injected into the bladder 16 grs. of cocaine dissolved in 12 fluid ozs. of water at a suitable temperature. After a few minutes, during which the patient was moved into different positions to insure the anæsthetic coming into contact with all parts of the wall of the bladder, it was found possible to proceed. The patient felt no pain whatever, and the surgeon

was enabled to do his work quietly and completely. The anæsthetic condition of the bladder lasted about twenty minutes. The experiment, having proved so successful, was repeated on five subsequent occasions with the same happy result. It was noticed, however, that the effect produced by the last two injections was less marked and did not last as long as after the others. No untoward symptoms followed at any time, but it is recommended to adapt the dose of the drug to the degree of vesical irritation, and never to use the higher strength before trying the effect of a weaker one.—*British Medical Journal*, May 5, 1888.

INTRAVASCULAR INJECTIONS IN COLLAPSE.—DR. DIARCONOFF has made a number of experiments on ten healthy dogs with a view of testing the effect of an intravascular injection of common salt, to which a little alkali has been added, on a collapsed condition of the organism. In order to induce collapse, chloroform was administered, and when the animal had shown signs of being in a more or less dangerous condition a small quantity of Schwarz's solution (which consists of chloride of sodium 6 grams, caustic soda 0.05 gram, in 1000 grams of distilled water) was introduced into the distal end of the femoral artery, or into the proximal end of the femoral vein or the jugular vein. A remarkable effect was produced by these injections on the character of the pulse and on the blood pressure. In some cases in which the heart appeared to have stopped, contractions were by this means reinduced. The effect on the respiration was not so constant; still, this usually improved. Of course, when the chloroform was pushed beyond a certain point, saline injections and artificial respiration alike failed.—*Lancet*, April 21, 1888.

MALTED FOOD IN INFANTILE DIARRHŒA.—In the *Australian Medical Journal*, December, 1887, DR. CLENDINNEN writes that he has met with considerable success from the use of malt in the treatment of infantile diarrhœa. In a case in a child about three months old, there were passed very large lumps of casein, together with a quantity of green matter. The author ordered the child to be fed upon half a teaspoonful of Kepler's extract of malt added to a pint of milk. In forty-eight hours the lumps of casein, together with the green matter in the motions, had disappeared, the child slept well, and the diarrhœa ceased entirely. In several other cases this treatment was adopted with complete success. Three ways have been suggested for adapting the casein of cow's milk to the requirements of young children: (1) peptonization; (2) the addition of barley-water; (3) the use of malt.

ANTIHEMORRHAGIC INJECTION.—MOUTARD-MARTIN advises the following:

Ergotine.....	2 grs. ms.
Glycerine.....	15 "
Water.....	15 "
M	

Inject from 1 to 1.5 grams of this solution.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JUNE 2, 1888.

THE "GENIUS OF AMERICAN INSTITUTIONS."

In the telegraphed letter of a contemporary from the meeting of the Association in Cincinnati we read: "The amendment proposed by DR. N. S. DAVIS taking executive power from the Association was not acceptable, and is thought not to be in keeping with the character of American institutions" (*Medical News*). This paragraph is, in the first place, misleading, since the object of the amendment was not to take the executive power from the hands of the Association, but out of the *general sessions*; and the objection to the amendment that the Association has no desire to abandon the management of its own affairs, is no objection at all.

But this article is not for the purpose of discussing that amendment. What we wish to know is, what is meant by that stereotyped phrase, "The genius, or spirit, or character of American institutions?" After meeting the phrase a hundred times or more, in the daily papers, in medical journals, in political speeches, in pulpit orations, and in private conversation, with out once getting even a vague idea of its meaning, especially when it is used in senses so apparently contradictory, one naturally becomes a little curious to know the proper usage and meaning of the term.

Is it an idiomatic expression, used when one has no other retreat from an argument or a proposition? The daily papers rail at propositions for further centralization of governmental power, at the medical laws and acts, at the creation of boards of health with police power, and at proposed laws for restraining or regulating the adulteration of foods (as do the manufacturers), and say that they "are contrary to

the genius of American institutions." Medical journals conducted in the interest of some colleges not too far above the grade of diploma-mills, or by editors that have thread-bare professional consciences, launch anthems at attempts at high medical education, and at medical organizations that will not admit irregular practitioners, as being "contrary to the spirit of American institutions." Some time ago a correspondent of a daily paper in this city spoke of the registration of midwives as being "subversive of the spirit of American institutions." Another Chicago paper speaks of the refusal of reputable physicians to advertise in the lay press as "not in consonance with the character of American liberty and institutions." While, on the one hand, ministers and advocates of the Sunday observance laws have said that the keeping open of saloons on Sunday is "a strike at the character of American freedom and institutions," the saloon men, on the other hand, declare that these laws are "a blow at the very spirit of American institutions."

We have been led to believe that the idea and realization of representation of the whole by a chosen few is a distinctly American institution; and yet we are informed that a proposition for such representation is not acceptable because "it is not in keeping with the character of American institutions." What does the phrase mean? It is a secretion like that of the cuttle-fish, used to befog an argument from which there is no escape. Are we to believe that there is some "subtle, occult atmospheric condition" that gives tone, and color and character to every thing that originates between Cape Cod and Cape Blanco, and between the Lakes and the Gulf, and that makes the American institutions infinitely superior to any and all others? Is this true in scientific and political American medicine? Is the face "set as a flint" against all improvements and suggestions that have had birth in other lands one of our "American institutions?" "The cobbler, the mule-driver, and the hod-carrier may combine their forces and, if they are smart enough to obtain the influence of some politicians, get a charter for a medical college, and embark in the profitable business of selling diplomas, which duly registered in our court houses, will enable other cobblers, mule-drivers and hod-carriers to freely distribute, for good cash, the blessings of whatever medical knowledge they may have been able to scrape together." This may be called an "American institution." But, "let medical education alone," says one; "this is a free and democratic country; a man has a right to be educated as he chooses; to force him to be educated properly is contrary to the

spirit of American institutions." "Let the people take care of their own health," says another; "if a man chooses to have a cess-pool next to his well it is his own business, and other people have no right to interfere. Such interference is subversive of the spirit of American institutions."

Every fight that has been made in this country against a medical practice act, against a board of health, or against laws for the protection of the health of the people, in whatever way, or from whatever sources of danger, has been made on the ground that such acts or laws were unconstitutional, and "contrary to the genius of American institutions." All suggestions and attempts for regulating or restraining the manufacture of patent medicines have been met by the answer: "The manufacturers have the right to engage in that business if they wish; if people choose to poison themselves it is their own look-out. But to restrain or control such manufacture would be contrary to the spirit of American institutions."

After all, then, the phrase seems to amount to this: "I know of no argument against your proposition, but I will look wise and say: it is not in keeping with the character of American institutions. I myself do not know what those words mean, but they sound as if they were pregnant with unutterable wisdom, and I use them for the sound."

Haste without regard to accuracy seems to be a growing "American institution," if we may judge by the telegraphed reports of the meeting in Cincinnati. While those of the profession that do not attend the meetings of the Association are anxious to know what is done at the meetings, they are not in such a tremor of haste and expectation that they cannot wait for an accurate report. No one can possibly object to an accurate report of the business meetings of the Association, but as the matter now is, it usually takes some months to correct the inaccuracies of one week's issue of some of our electric contemporaries. Inaccuracy is neither condoned nor corrected by telegraph wires, notwithstanding the marvelous therapeutic properties of electricity.

TOXIC EFFECTS OF ANTIFEBRIN.

A correspondent of Comanche, Texas, asks the following questions: "How many deaths have been reported from antifebrin? What has been the fatal dose? And what are the toxic symptoms besides depression, collapse, etc.?" These questions were prompted by the death of a young lady recently, which was attributed to antifebrin, of which she had

been in the habit of taking 10-gr. doses for paroxysms of headache. The symptoms in this case as given by our correspondent were "coma; contraction of the pupils; breathing slow, spasmodic and stertorous; cyanosis; slow and feeble pulse; collapse and death nine hours after the supposed ingestion of the drug." It is further stated that the deceased "was known to have purchased a 2-oz. bottle of tinct. opii a few days before her death, which was never found," and was also a victim of melancholia.

The only case we recollect seeing reported as a death directly from antifebrin was by von Quand, as briefly alluded to in the chapter on Antipyretics in the "Annual of Universal Medical Sciences," just published. In this case it is simply stated that the child, age not given, took 4 grs. of the antifebrin every two hours all day, at the end of which time it was found in complete collapse, strongly cyanotic, and soon died.

The fatal dose for an adult has not been ascertained. From 1 to 2 grams (grs. xv to xxx) in 24 hours, have been repeatedly given in febrile and neuralgic affections without toxic effects. When given in larger quantities it has induced cyanosis, increased frequency of respiration, feebleness of pulse, natural or dilated pupils, and marked indications of collapse. Those who have experimented with the drug represent its toxic effects to be similar to those of aniline, from which it is derived. The symptoms of the case mentioned by our correspondent certainly much more perfectly resemble those produced by toxic doses of opium than any hitherto observed from the use of antifebrin.

UNIVERSITY OF MINNESOTA.

The Board of Regents of the University of Minnesota has established a Medical Department in connection with the University. The department is located at Minneapolis. It is to be a high-grade school, embracing the main features of the Medical Department of the Northwestern University, Harvard, the University of Michigan, and the University of Pennsylvania. This action of the Board does not increase the number of schools in Minnesota but, upon the contrary, reduces the number. The Minnesota Hospital College and the St. Paul Medical College have ceased to exist, and a portion of the Faculty of each school are elected to positions in the new school. This action on the part of the Board is largely in response to the wishes of the profession of the State for a high-grade school in connection with the University, with a Faculty in sympathy with higher medical education, and working in harmony

with the new Medical Practice Act. The Board of Regents very properly appointed a committee consisting of the President of the State Medical Society, the President of the State Board of Health, the President of the State Board of Medical Examiners, the President of the University, the Dean of the Medical Department, to nominate a Faculty for the new department. The instructions of the committee were to secure the best men at their command. Professor C. J. Bell, of the Johns Hopkins University, is the only Eastern man in the Faculty. He is elected to the Professorship of Chemistry. The University of Minnesota is very amply endowed in lands and by the State, and by maintaining a high curriculum for its medical department, it will undoubtedly enlist the good wishes and support of the profession of the Northwest.

MULTIPLE INCISIONS FOR INDOLENT ULCERS.—Harbord's method of treating indolent ulcers, which has been in use in the St. Spiritus Hospital in Frankfurt-on-the-Main for some years, is thus described by Dr. F. SPÄTH, in *Centralbl. für Chirurgie*, No. 14: The whole ulcer is divided lengthwise by a deep incision extending a considerable distance into the healthy tissue, after which cross incisions are made through the callous tissue into the healthy tissue at intervals of about 1.8 cm. The incisions should extend through the skin and the subjacent fascia, so that the wounds will gape widely. Hæmorrhage, which is sometimes profuse, is controlled by tampons, and the whole wound is dressed with iodoform dressings. The dressing is removed in from 8 to 14 days, when healthy granulations will be seen springing from the incisions; they soon cover the whole surface, to the level of the surrounding skin, from which there is a rapid growth of new epidermis. It is at this stage, when there has been great loss of skin, that transplantation may be effected and will be useful. The incisions are made after necrotic fragments are removed, and when the ulcer is no longer foul.

REFLEX INHIBITORY POWER OF COCAINE.—MR. E. HURRY FENWICK reports four cases in the *Lancet*, of May 5, which show that cocaine is possessed of considerable reflex inhibitory power. A series of experiments on decapitated frogs showed that when a 20 per cent. solution was thrown into the cloaca so as to inject the bladder and rectum, reflex excitability was so far diminished that the foot would be retained in a .2 per cent. of sulphuric acid for 20, 30, 60, or even more seconds, while usually the time is about

.008 to .015 seconds. In a very painful case of myalgic wry-neck a 20 per cent. solution (gtt. 30) thrown into the urethra caused a diminution of the cramp and stiffness in 40 seconds, and in 60 seconds complete relief, which lasted for some hours. Mr. Fenwick reports also a case of facial neuralgia and flying pains, and one of burning pain in the glans penis and legs relieved by cocaine thus applied. Such applications have, however, no power over strong stimuli, corresponding to the pain of carcinoma, inflammation, etc.

PHENACETIN IN PYREXIA.—MR. H. OSBORNE GRENFELL calls attention, in the *Practitioner*, May, 1888, to the use of phenacetin—para-acetphenitidin, the ethylic ether of paramidophenol—in the treatment of pyrexia. This drug is a slightly reddish, inodorous and tasteless powder, but slightly soluble in water, more so in glycerine, and readily soluble in hot alcohol. It is insoluble in alkalies and acids (except glacial acetic acid). It is most conveniently administered in capsules. The cases, with charts, reported by Mr. Grenfell, show that phenacetidin is an undoubted antipyretic. In cases of pyrexia the action of the drug is seen within half an hour after administration. The patient generally perspires freely, and feels drowsy, often falling asleep. The best dose for an adult seems to be about eight grains. Children bear the drug well. It is also a satisfactory analgesic in neuralgia.

EDITORIAL NOTES.

THE STATE MEDICAL SOCIETY OF WISCONSIN will hold its forty-second annual meeting in the Court House, Milwaukee, convening at 8 o'clock P.M. of Tuesday, June 5, 1888, with a full and interesting programme of work before it. L. G. Armstrong, M.D., Boscobel, President; J. T. Reeves, M.D., Appleton, Secretary.

THE OHIO STATE MEDICAL SOCIETY will hold its forty-third annual meeting at Columbus, O., June 13, 14 and 15, 1888. The programme gives promise of an interesting and profitable meeting. President, Samuel F. Forbes, Toledo; and Secretary, G. A. Collamore, Toledo, O.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will hold its next annual meeting at St. Louis, commencing September 11, 1888, and continue three days.

We regret to learn of the illness, from perityphlitis, of DR. FRANK P. FOSTER, editor of the *New-York Medical Journal*.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

THIRTY-NINTH ANNUAL MEETING

The Thirty-Ninth Annual Meeting assembled at Central Music Hall, Cincinnati, O., May 8, 1888.

DR. W. W. DAWSON, Chairman of Committee of Arrangements, called the Association to order and introduced Rev. R. A. Gibson, who offered a prayer.

The President, Dr. A. Y. P. GARNETT, of D. C., took the chair, supported by the Vice-Presidents, Drs. Duncan Eve, Tenn.; D. Colvin, N. Y.; C. J. O'Hagan, N. C.; and A. Stedman, Col. The Permanent Secretary, Dr. Wm. B. Atkinson, Pa., and the Assistant Secretary, Dr. Jos. Ransohoff, were at their posts. The Treasurer, Dr. R. J. Dunglison, Pa., and the Librarian, Dr. C. H. A. Kleinschmidt, were present. Ex-Presidents Drs. L. A. Sayre, N. Y., N. S. Davis, Ill., T. G. Richardson, La., and Jos. M. Toner, D. C., occupied seats on the platform.

HON. AMOR SMITH, Mayor of Cincinnati, made an

ADDRESS OF WELCOME

on behalf of the citizens.

DR. C. G. COMEGYS then delivered the following

ADDRESS OF WELCOME

on the part of the profession:

On the part of the medical profession of this city I am happy to welcome you to Cincinnati, and to assure you that we, with all of the citizens, feel greatly honored that you have selected this, the most central city of the Nation, for this annual congress. Twice before, to-wit: in 1850 and in 1867, the Association has held its annual councils here, and your professional brethren and the people cordially united to make those occasions encouraging and profitable. It is sad to feel that a majority of those who then assembled, and of those who greeted you, have passed away; but it is evident from the numbers, the freshness and manly vigor seen on every side, that the genius and spirit still live—yea, are augmented and fully competent to carry forward the great purposes of your predecessors.

These large assemblies of medical men, in increasing numbers every year, prove indubitably that the value of the Association is no longer a question. To say nothing of the scientific discussions involved, it is clear that the associations of the Association give immense satisfaction to all. It is, certainly, a great pleasure for men, who are engaged in common duties and modes of life in widely separated areas, to be thus brought together for the establishment of acquaintanceships that promote community of action for a higher performance of their beneficent work among the people. It is a wonderful sight to behold so large a body of cultured men who are striving, always and everywhere, to enlarge public happiness by investigations for the prevention of those causes and agencies that undermine the public health and welfare; when, if complete success should crown

their lofty aims, the remunerative part of their labors would be about extinguished, yet, in all ages (and never as much so as now) the medical profession is unceasing in its labors to trace devastating epidemics to their lair; to avert the processions of infectious diseases; to isolate those who are suffering therewith; to disinfect localities; to point out the most healthful modes of living—in regard to light and air; the purity and abundance of water supply; the evils of adulterated food; the overtasking of labor; the prevention of ill-assorted and consanguineous marriages; the abuses of the brain, and the suppression of those two giant evils of civilization—intemperance and prostitution.

This period of your assembly is one of extraordinary interest to our people, for this is the centennial year of the settlement of Cincinnati, and you can see by the vast structures in Washington Park and in the rear of this building the extraordinary preparations for its magnificent celebration. It is an heroic age and a glorious race which we wish to commemorate. We wish to crown their deeds with praise and their memory with gratitude, to recount their hardihood, labor, self-denial, and piety, and to remind their descendants, who occupy the fields of their conquest, of their sublime patriotism, and to excite them to emulate their courage, their toil and their public virtue.

Allow me then, briefly, to dwell on that period—more especially on the character of a medical mind that pervaded that time as one of those "immortal men who live again in lives made better by his presence."

One hundred years ago a small body of adventurous men, with their families, descended the beautiful Ohio and landed their rudely constructed barges on the shore. The State of Virginia, with great nobleness of soul, had ceded the vast Northwestern Territory to the General Government, and Congress had enacted that it should be a land of unqualified freedom. The richness of the soil and the cheapness of the lands led citizens of the East to seek new homes in western wilds. The colony that landed here was not large; their whole possessions occupied but a small number of flat boats or barges. It seemed to be a stupendous undertaking thus to plant themselves in the primeval forest on this wild coast, with no means of immediate sustentation but the stores in their barges and what they might hunt in the wilderness. There were no grounds open for any culture and the forest was roamed by wild beasts and more savage and hostile men.

But this forlorn hope of civilization were men of no common mold. They brought with them courage, culture, and integrity, and were full of the high aims of the Eastern people who had just fought for their independence and secured the vast British possessions south of the Canada line. They were imbued with the loftiest motives that can animate the soul, and fearing nothing but God, they confronted the wilderness and its warlike denizens with that dauntless courage which renders individuals and communities, when their cause is just, unconquerable.

They constructed their cabins and block houses,

organized a military band, established a school, and built a rude church. Then they passed a long and severe winter, but in the spring new colonists arrived, possessed of various trades and implements for a better construction of tenements and the development of crops of grains and fruits. So they gradually multiplied, felled the forest, opened fields, and the hamlet gradually became a village, and that expanded to a town. Meanwhile a strong military post was established, a Territorial Governor came out, a county was organized, a seat of justice created, and the foundations of a State were displayed. But their condition of peace and hope was soon blasted. The terrible defeat and massacre of the army of St. Clair, in 1791, struck terror to the settlers. The savages were more belligerent and daring than ever before, and general consternation prevailed.

The Eastern people became aroused to the necessity of protecting the pioneers. President Washington commissioned General Wayne to form a new army to conquer a peace. He arrived with all the troops he could gather in the summer of 1793, and camped on the western side of this city.

The losses of the western settlements had been so large by the defeat of St. Clair that the forces of General Wayne were insufficient for the proposed campaign. Delay followed delay, but at last the reinforcements came. The settlers south of the Ohio at length freely offered themselves for the war.

Nearly a century has passed, but the descendants of the pioneers shall never cease to commemorate the joyful time, when, with bugle notes and flying banners, 2000 mounted riflemen from Kentucky, led by Governor Shelby, crossed the Ohio and joined the camp of Wayne. This was a sure presage of the victory which he gained, and which broke the savage power forever. Wayne's success brought peace to the Ohio valley; all terror of the savages subsided, and an immense immigration from the East and South set in. Cincinnati felt the influx: commerce and manufacture began to flourish, and great public spirit emerged, so that in a few years she became the most busy and progressive town of the frontiers. But the town was without any institutions of higher learning. There was no lack of cultivated people; indeed, in the pulpit and at the bar, and in medicine, there were men possessed of acknowledged ability and collegiate training, and several of them had a national reputation, but there was no master mind who, as a leader, could bring into combined action all the needs and desires of a growing and refined community for the establishment of institutions for instruction in higher learning.

In the meanwhile, however, there was growing to manhood, in the wilds of Kentucky, one whose soul had caught the spirit of the times, and who, at length, came to Cincinnati with the largest desires to take his part in her future welfare. He had been nurtured amid all the deprivations, hardships and perils of the wilderness, and his faculties had been precociously developed by all those struggles with dense forests, ferocious beasts and savage men that the pioneers must encounter and subdue. His young life was passed in the wild solitudes of the forests,

and his soul loved nature. From his earliest consciousness he had drunk in all her wild and beautiful forms, and it had kindled his natural powers of observation with the fervor of deepest passion. Such a mind, so full of enthusiasm for knowledge in Nature's arcana, could not remain in the dull, routine life of the planter. It was happily directed towards medicine, and Daniel Drake came to this city in the first year of the century and apprenticed himself to Dr. Goforth as his office student and apothecary. His opportunity for formal instruction in books had been very limited, but this lack of opportunity was greatly compensated by his habits—so thoroughly acquired—of observation, comparison, and meditation. After a patient and methodic service of six years, in which he had made himself familiar with the text-book, he felt that he must go to the famous school of the East where Rush, Physic and Wistar taught. With scanty means he completed his long journey on horseback and gratified the wish of his heart.

On his return, with enlarged views of culture, he entered busily into practice and rose rapidly in the public estimation. Besides medicine, he investigated at large subjects in natural history and physics, also studies of the aborigines and the monuments that marked their residence in our valleys. He wrote also descriptions of the rising City, the Miami valleys and their prospective wealth. These writings, particularly the scientific ones, attracted wide attention, so that when at a later period he returned to Philadelphia to attain his degree he was received by the faculty of the University and the distinguished society of Philadelphia as a savant.

To the south of us then, in Kentucky, lay another flourishing frontier town of nearly equal population with Cincinnati. It was not only distinguished for the heroic patriotism of its people, but also for their high social culture and the organization of the Transylvania University. Lexington first held aloft the torch of science in this wild world, and was recognized as the Athens of the West. There, under the auspices of B. W. Dudley, in 1817, the first medical school in the West was organized, and Drake was elected one of the professors. Dudley and Drake were of the same age, and both Kentuckians. They first met as students in Philadelphia. Dudley graduated in that year—1806—and four years later went to France, joined the French army as junior surgeon and served on Lavey's staff in many battles, ending, I believe, at Waterloo. Drake returned home to gain the means to go back to the University and obtain his degree, which he accomplished in 1816.

Thus these two great and ardent minds were again united, and with their associates, Caldwell and Richardson, soon developed a flourishing medical department in the University. But neither Drake's residence and happy associations in Philadelphia, nor his success as a teacher in Lexington, could divert his thoughts and hopes from his beloved Cincinnati; indeed, it only kindled within him an insatiable zeal to return to devote his life to the erection of great schools in the arts and sciences. So he resigned, after delivering two courses of lectures, and

consecrated himself to his great purpose. He spared nothing to accomplish it. He spent a winter at the State capital and secured charters for the Cincinnati College, the Medical College of Ohio, and the Cincinnati Hospital as a place for the demonstration of clinical and pathological medicine. His ambition was not only to be successful as a practitioner and teacher, but an active-minded, useful citizen as well; and he gave much thought to all propositions that would promote the general welfare. He soon comprehended that the traffic and commerce connected with the river were inadequate to the building of the great city of his prophecy. He saw, the first, I believe, the utility and practicability of a canal to connect the river with Lake Erie, and at a later period, when railroads attracted attention, the immense importance of connecting the city with the great South by a railroad to Charleston, and he earnestly pressed his projects by his writings and public addresses. Both of these great schemes of internal commerce are now in operation and have proved of value to the city. Nothing seemed to escape him for the adornment of the city and the comfort of the people. The line of elm trees on the south side of Washington Park were planted under his own direction over sixty years ago.

He was a voluminous writer on professional and general topics, but the work with which he crowned his life's labor was his "Systematic Treatise of the Diseases of the Interior Valley of North America," to which he devoted more than twenty years of travel throughout the vast Mississippi Valley. It was, so to speak, "dug out of the very elements of the continent and society of America." It is a great work of absolutely original research in medical topography, and will always remain a monument to his fame that has no parallel in the science and literature of medicine.

Though Drake has long been dead, yet all of his great undertakings remain and are flourishing. The Cincinnati College is the large Law school of the Ohio Valley; the Medical College of Ohio, now a Medical Department of the University of Cincinnati, was never so prosperous; the Clinical and Pathological School of the Hospital is attended by 400 students. It has a large and growing library and museum, and is now undertaking to establish a pathological laboratory for original research. The beautiful elm trees are now as verdant as ever.

The wonderful activity of Drake's mind, which led him to undertake the most severe professional labors and throw himself besides into every struggle for the advancement of the interests of society, is readily explained when we consider the philosophic spirit which animated his mind; for he was possessed of that gift of genius which sees beyond all the apparent disparity of phenomena; that severe unity, after which all true philosophy is continually aspiring.

To him the universe was not a summation of material phenomena conveying sensuous impressions merely, but a revelation. His was a reverent and devout soul. He felt like von Barden, who declares that "he who seeks in nature, nature only, and not reason; he who seeks in reason, reason only, and not

God; he who seeks God out of and apart from reason, or reason out of and apart from God, will find neither nature, nor reason, nor God, but will assuredly lose them all."

All the institutions he planted exhibit his great powers of mind and will always preserve his memory fresh and venerated in the great Western Valley. In the medical firmament bending over the world, reaching from the past and stretching indefinitely away amidst all the glittering galaxy and burning orbs that represent the immortal dead, the orb of Drake will shine as a star of light forevermore.

In Cincinnati his great example and precepts have continued to affect its medical life. I think it my duty to say to the members of the American Medical Association that a spirit of original research has been carried forward here, and in a period of forty years of professional life in this city I have never known so many young men of thorough training in our own schools, and supplemented by severe study in the clinical and pathological schools of Great Britain and the Continent, as are now among our active practitioners.

A few last words about our city at large: We hope that you will take a general view of its topographical situation. It is very peculiar and striking. If you will ascend our hills you will find that they are built of those stratified sedimentary masses that belong to the lower silurian epoch. Between all these layers quantities of marine shells are found that prove that they formed the bottom of a great salt sea.

Vice-President Dr. Duncan Eve, of Tenn., presided while THE PRESIDENT delivered the *Annual Address*. (See p. 573, THE JOURNAL May 12.) On motion, the Address was referred to the Editor of THE JOURNAL for publication, with the thanks of the Association.

Dr. N. S. Davis: As some of the Sections have more papers than can be disposed of in the afternoon hours, they ask permission of the Association to meet for Section work at 11 o'clock in the morning, so that they may have a morning as well as an afternoon session; therefore

Resolved, That the Sections may meet for scientific work at 11 A.M. as well as at 3 P.M.

The resolution was adopted.

Dr. Davis asked the Judicial Council to meet at the Burnet House at 9 A.M. on Wednesday. The Permanent Secretary read invitations from the College of Music of Cincinnati, from the Cincinnati Chamber of Commerce, from the Technical School of Cincinnati and from the Centennial Exposition Association, which were received with the thanks of the Association. On motion, the Association adjourned to meet at 10 A.M. on Wednesday.

WEDNESDAY, MAY 9—SECOND DAY.

THE PRESIDENT called the Association to order at 10 A.M. The Secretary announced the following Committee on Nominations:

Ark., P. O. Hooper; Cal., H. S. Orme; Conn., W. C. Wile; Dak., J. D. McConnell; D. C., D. W. C.

Patterson; Ga., R. Battey; Ill., C. Gilman Smith; Ind., T. B. Harvey; Ia., R. W. Llewellyn; Kan., J. E. Minney; Ky., D. S. Reynolds; La., T. G. Richardson; Me., A. Garcelon; Md., J. J. Chisolm; Mass., C. J. Belt; Mich., W. Brodie; Mo., T. J. Lutz; Minn., Alex. J. Stone; Neb., R. C. Moore; N. J., L. N. Quimby; N. Y., L. D. Bulkley; Ohio, Thad. A. Reamy; Pa., A. M. Pollock; S. C., J. Evans; Tenn., T. K. Powell; Tex., E. J. Bell; Vt., D. P. Allen; Va., J. W. Chancellor; Wis., J. T. Reeve; U. S. N., W. T. Hord; U. S. Marine Hosp., John B. Hamilton.

DR. ROBERTS BARTHOLOW, of Pa., read the

ADDRESS IN MEDICINE.

(See p. 669.) On motion it was referred for publication.

Dr. J. H. Hollister, of Ill., Secretary of the Board of Trustees, read the

ANNUAL REPORT OF THE TRUSTEES OF THE JOURNAL as follows:

The Trustees for the publication of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION respectfully submit the following as their annual report:

THE JOURNAL has been issued upon the day named for publication, each week of the current year.

The number of copies required for the supply of the members of the Association and for subscribers weekly was 4,572. To provide for exchanges, and for the completion of files, as members may desire, the weekly issue was placed at 5,000 copies. The editorial management, as formerly, is committed to Prof. N. S. Davis as editor in chief. It has its own office of publication at Chicago, and the cash value of its type, fixtures, etc., belonging to THE JOURNAL printing-office, amounts to \$1,054.19, which is free of incumbrance and properly insured.

The receipts of THE JOURNAL for the year have been as follows:

It should be said in explanation that all membership dues are paid to the Treasurer of the Association, leaving only the money paid for subscriptions, advertisements, reprints and extra JOURNALS to be received at the office of publication. From the sources just named there have been received at this office during the year ending March 31, 1888, the sum of \$11,897.98; of which \$2,452.25 was from subscribers; \$8,548.48 from advertisers; \$753.75 for reprints; and \$143.50 rent for part of printing-office. These figures show an aggregate increase of income from the sources named of \$4,317.35 over the receipts from the same sources the preceding year.

The disbursements on account of THE JOURNAL have been as follows:

The total publication expenses of THE JOURNAL during the year ending March 31, 1888, was \$16,261.47; being an increase of expenditure in this department of \$3,099.46 over that of the preceding year. This increase of expenditure has been caused by the addition of four pages of reading matter to THE JOURNAL, from four to six pages of advertising, 200 copies to the regular weekly issue, the printing of the triennial list of permanent members of the Association, and the issue of 20,000 extra copies and

their distribution as sample copies. The aggregate cost of these several items fully equals the increase in expenses; and yet, as shown in the preceding paragraph, the increased receipts through the publication office alone have exceeded the increased expenses by \$1,217.89.

It will thus be seen that THE JOURNAL is not only self-sustaining, but actually a source of revenue to the Association.

The Trustees are unanimous in the opinion that the increased receipts should be wisely expended in the improvement of THE JOURNAL. As the type in use is becoming somewhat worn, they have decided that the next volume shall appear in a new dress and with a better quality of paper. They have authorized, beside this, a sum not to exceed \$400, to be expended in meeting legitimate needs, at the office of publication.

It is also the purpose of the management, so far as means will permit, to enlarge the editorial corps and render THE JOURNAL of constantly increasing value to our members and subscribers.

We believe that the best interests of THE JOURNAL require that we make the following request, namely:

That the Association shall place at the command of the editor in chief the exchanges of THE JOURNAL for reference, and that the books and monographs for review and editorial notice be also placed at his disposal to be used by him in such manner as in his judgment the interests of THE JOURNAL may require.

In conclusion the Trustees desire to express their sincere thanks for the confidence which the Association has been pleased to repose in them, and they beg to assure you that, so far as their individual and united effort may avail, they will earnestly endeavor to command the continuance of that confidence and to fulfil as best they may the trust committed to their hands. Very respectfully,

J. M. Toner, President, D. C.; E. M. Moore, N. Y.; Leartus Connor, Mich.; A. Garcelon, Me.; P. O. Hooper, Ark.; I. S. McMurtry, Ky.; E. O. Shakespeare, Pa.; Wm. T. Briggs, Tenn.; and J. H. Hollister, Secretary, Ill.

On motion of Dr. W. H. Daly, Pa., it was received, and its recommendations were adopted.

Dr. E. A. Wood, of Pa., Chairman, read the report of the Committee on Dietetics.

Dr. F. Woodbury, of Pa., presented certain views as an exposition of how the work on Dietetics should be done.

On motion of Dr. L. A. Sayre, N. Y., amended by Dr. Benj. Lee, Pa., and accepted by Dr. Sayre, it was Resolved, That the Committee on Dietetics be continued, and that it be and is hereby instructed to present a report at the next meeting of this Association embodying the general principles to be observed in a rational system of dietetics; that the Committee have power to enlarge its membership, and that the Committee of Arrangements is hereby authorized to give its work a proper place on the programme of the next meeting.

Dr. N. S. Davis, Ill., brought up the amendments to the Constitution offered at the last session.

Vice-President Dr. Duncan Eve, Tenn., presided.

The amendment relative to members by application was read, and on motion was unanimously adopted as follows:

Members by Application shall consist of such members of the State, County and District Medical Societies entitled to representation in this Association, as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing signed by the President and Secretary of the society of which they are members, and the amount of the annual membership fee, \$5. They shall have their names upon the roll and have all the rights and privileges accorded to *Permanent Members*, and shall retain their membership upon the same terms.

The amendment regarding the Board of Trustees was presented and unanimously adopted, as follows:

The *Board of Trustees* shall consist of nine members, three of whom shall be elected annually on the nomination of the standing General Committee, and shall serve for three years. It shall be the duty of this Board to provide for and superintend the publication and distribution of all such proceedings, transactions, and memoirs of the Association as may be ordered to be published, and in such a manner as the Association may direct; and in doing this, it shall have authority to appoint an editor and such assistants, and determine their salaries, and procure and control such materials as may be necessary for the accomplishment of the work assigned to it. To further facilitate its work it shall be the duty of the Secretaries of the Association and of the several Sections, during each annual meeting, or as soon thereafter as practicable, to deliver to the Board, or such editor or agent as it shall appoint, all such records of proceedings, reports, addresses, papers, and other documents as may have been ordered for publication, either in the general sessions or in the Sections. All moneys received by the Board of Trustees or its agents, resulting from the discharge of the duties assigned them, must be paid to the Treasurer of the Association, and all orders on the Treasurer for disbursements of money in any way connected with the work of publication must be endorsed by the President of the Board of Trustees. It shall be the further duty of the said Board of Trustees to hold the official bond of the Treasurer for the faithful execution of his office; to annually audit and authenticate his accounts, and present a statement of the same in its annual report to the Association; which report shall also specify the character and cost of all the publications for the Association during the year, the number of copies still on hand, and the amount of all other property belonging to the Association under its control, with such suggestions as it may deem necessary.

The third amendment, relative to the superseding of the Nominating Committee was read.

Dr. J. M. Keller, of Ark., moved to amend that each State should select.

On motion, of Dr. Daly, this was laid upon the table.

After some further discussion, on motion of Dr. H. A. Johnson, of Ill., it was agreed to print the

amendment and make it the special order for Thursday, at 12 M.

On motion, adjourned to meet on Thursday at 10 A.M.

THURSDAY, MAY 10—THIRD DAY.

THE PRESIDENT called the Association to order at 10 A.M.

The Permanent Secretary read the following:

RESOLUTIONS ADOPTED BY THE STATE MEDICAL SOCIETY OF ARKANSAS AT THE THIRTEENTH ANNUAL SESSION, APRIL 27, 1888, AND ORDERED TO BE TRANSMITTED BY THE SECRETARY TO THE AMERICAN MEDICAL ASSOCIATION.

Resolved, That the members of the State Medical Society of Arkansas have for years observed with pain and mortification the patronage given to charlatanism in all its multifarious aspects by the religious press of our country.

Resolved, further and more specifically, that the appearance in religious papers, ostensibly published for the inculcation of truth and morality, of serious homilies on prayer and praise side by side with cures for consumption, cancer, Bright's disease and other incurable ailments, to which an editorial endorsement is often given, as well as secret preparations under the cloak of remedies for diseases, but really intended for purposes of feticide and other immoral uses, largely tend to shake the confidence of the profession of medicine in the integrity and purposes of the managers and editors of such journals.

Resolved, further, that it has been the well known custom of the profession to render services gratuitously to clergymen, which we do not regret nor do we propose to recall, and yet we must assert that the frequent occurrence of endorsements and recommendations of the clergy of our country of peripatetic doctors and advertising charlatans has in many instances been the only reward of our gratuitous services.

Resolved, further, that we are aware that the editors of religious newspapers admit the painful situation in which these advertisements place them, and attempt to excuse themselves by saying that it is necessary to take these advertisements in order to obtain means to conduct the papers; but, in the language of orthodox theology, we would say, "Put behind you that damnable doctrine that we must do evil that good may come."

Resolved, further, that as a Society we declare that the continued perpetration of the above offenses by some of the clergy and religious press of the country brings harm to the bodies of their constituency, and damages materially their influence upon the thinking class of the medical profession.

On motion of Dr. W. T. Akins, of Ill., the resolutions as read were fully endorsed as the sense of this Association.

The Permanent Secretary read an invitation from the Philadelphia County Medical Society for the Association to hold its next meeting in that city.

Dr. P. O. Hooper, Chairman, read the

REPORT OF THE NOMINATING COMMITTEE.

To the President and Members of the American Medical Association:—Your Committee on Nominations have the honor to report that they yesterday met and organized by the selection of Dr. P. O. Hooper, of Arkansas, as Chairman, and Dr. John B. Hamilton, of the Marine Hospital Service, as Secretary. After mature deliberation they, by ballot, proceeded to the nomination of the following officers for the ensuing year.

For President—W. W. Dawson, of Ohio.

For First Vice-President—W. L. Schenck of Kansas.

For Second Vice-President—Frank Woodbury, of Penn.

For Third Vice-President—H. O. Walker, of Mich.

For Fourth Vice-President—J. W. Bailey, of Ga.

For Treasurer—Richard J. Dunglison, of Penn.

For Permanent Secretary—Wm. B. Atkinson, of Penn.

For Librarian—C. H. A. Kleinschmidt, of D. C.

For Chairman Committee of Arrangements—H. R. Storer, of Newport, R. I.

The following were elected Trustees to fill the vacancy caused by the expiration of their respective terms of office: E. M. Moore, of N. Y., John H. Hollister, of Ill., and Joseph M. Toner, of D. C.

To fill a vacancy in the Judicial Council caused by the death of Dr. Stormont, of Kansas, W. A. Phillips, of Kansas.

To fill vacancies in the Judicial Council caused by expiration of term of office: A. M. Pollock, of Penn., W. C. Van Bibber, of Md., J. F. Hibberd, of Ind., Chas. S. Wood, of N. Y., J. McF. Gaston, of Ga., W. H. O. Taylor, of N. Y., George L. Porter, of Conn.

To deliver the address on *General Medicine*—William Pepper, of Penn.

To deliver the address on *General Surgery*—P. S. Connor, of Ohio.

To deliver the address in *Slate Medicine*—W. H. Welch, of Md.

For Members of the Committee on State Medicine—Ala., Jerome Cochran, Ark., Jas. A. Dibrell, Jr., Cal., G. G. Tyrell, Col., Chas. Denison, Conn., W. C. Wile, Dak., F. P. Kenyon, D. C., J. F. Hartigan, Del., L. P. Bush, Fla., J. V. Porter, Ga., J. P. Logan, Ill., J. H. Rauch, Ind., L. D. Waterman, Ia., J. F. Kennedy, Kan., W. E. Oldham, Ky., J. N. McCormack, La., S. E. Chaillé, Me., T. J. Foster, Md., T. A. Ashby, Mass., H. P. Walcott, Mich., Henry B. Baker, Miss., Wirt Johnson, Mo., L. D. Matthews, Minn., Perry H. Millard, N. C., Thos. F. Wood, Neb., W. M. Knapp, N. J., I. N. Quimby, N. Y., T. M. Flandreau, N. H., G. P. Conn, Ohio, Byron Stanton, Ore., W. D. Baker, Penn., Benj. Lee, R. I., H. R. Storer, S. C., H. T. Horlbeck, Tenn., J. Berrien Lindsley, Vt., J. H. Hamilton, W. Va., G. W. Baird, Va., Dr. Ashton, Wis., J. T. Reeve, U. S. Navy, Surgeon Wolverton, U. S. Army, F. C. Ainsworth, U. S. Marine Hospital Service, J. A. Kinyoun.

The following were named as the Committee on Necrology: Ala., G. E. Ketchum, Ark., L. P. Gibson, Cal., R. H. Plummer, Dak., F. M. Crain, D. C., J. M. Toner, Fla., Neal Mitchell, Ga., P. R. Courtie-

roy, Ill., D. W. Graham, Indiana, J. F. Beard, Ia., J. F. Priestly, Kan., Robert Aikman, Ky., H. M. Skillman, La., J. R. Matas, Me., A. J. Fuller, Md., John Morris, Mass., G. M. Garland, Mich., G. E. Ramsey, Miss., Dr. Trimble, Mo., A. H. Meisenbach, Minn., W. W. Mayo, N. C., K. P. Battle, Neb., Dr. Galbreth, N. J., W. P. Watson, N. Y., W. W. Potter, N. H., Dr. Whiting, Ohio, A. H. Brundage, Ore., Dr. Shackelford, Tenn., J. B. Murphy, Vt., A. L. Finley, Va., M. L. James, Wis., Dr. Mackie, U. S. Navy, W. T. Hord, U. S. Marine Hospital Service, P. H. Bailhache.

Your Committee also selected of their number the following as a sub-committee to appoint alternates in case any gentleman named to deliver a general address shall decline to serve, viz.: John B. Hamilton, Wm. Brodie and A. Garcelon.

Your Committee name as the next place of meeting, Newport, R. I., and the time of meeting as the first Tuesday in June, 1889.

P. O. HOOPER, *Pres't.*

JOHN B. HAMILTON, *Sec'y.*

On motion of Dr. J. F. Hibberd, Ind., the report was received and the nominations were confirmed.

Vice President Dr. Duncan Eve was called to the chair.

Dr. E. M. Moore, N. Y., read the Address on Surgery. On motion, a vote of thanks was extended to Dr. Moore for his able paper, and it was referred for publication (See JOURNAL of May 19).

The Permanent Secretary read the

REPORT OF THE RUSH MONUMENT COMMITTEE,

A. L. Gihon, Chairman; also, report of Dr. Toner, Treasurer of the same.

REPORT OF THE RUSH MONUMENT COMMITTEE.

As Chairman of the Committee appointed to provide for the erection of a monument to Benjamin Rush at the capital of the United States, I beg to report progress, albeit that progress is exceedingly slow and unsatisfactory. Your Committee might be wholly discouraged but for the fact that nowhere has there been met anything but approval and commendation of the proposed monument. So uniform has been this sentiment that it cannot be doubted that, among the more than 100,000 physicians and students in the United States, a sufficient number will be found to contribute a dollar each to erect such a statue at the National capital as shall be creditable to the medical profession, an appropriate testimonial of this great patriot-physician, and a conspicuous ornament among the many beautiful works of art which adorn the city of Washington. I have never met a person opposed to this project, and have only heard of one, whom I regret not having seen, for he must be the one without compare in our profession, who did protest against giving a dollar towards erecting a statue to a man "who had founded a medical college at Chicago and had not left money enough to put a monument over his own grave."

The chief problem your Committee has had presented to it and has not yet satisfactorily solved, is how to collect these subscriptions from persons who, while quite willing to hand a dollar to any one ready to receive it, forget, or neglect, or do not care to take

the trouble to obtain a mailable dollar and send it to any appointed address. Similar forgetfulness, neglect and indisposition are true of individual members of the Committee, who, under its original constitution, were charged with the collection of subscriptions from the residents of the entire State or Territory which they represented. The labor and expense of attempting to communicate by correspondence with 100,000 individuals scattered over all this country are so great, that it is hoped the members of the medical profession, on reading this statement, will at once inclose their subscriptions to the Treasurer of the Monument Fund, Dr. Joseph M. Toner, at 615 Louisiana Avenue, Washington, D. C., and that every physician so doing will further personally interest himself, and herself, in obtaining a similar subscription from each friend and acquaintance in the ranks of the profession in his or her immediate neighborhood.

Apart from individual effort, the chief dependence of your Committee must be on the zealous coöperation of the medical societies, medical colleges, and other medical institutions, and more than all in that of the medical press of the country. The State Medical Society of California, at its annual meeting at San Francisco on April 18, gave an earnest of the possibilities of State work. True to their promise of the previous year, every member of the Society, during a recess taken for the purpose, handed a dollar subscription to Dr. Tyrrell, the member of the Committee for California, who was thus able to transmit to the Treasurer \$106, the amount subscribed being the exact equivalent of the number of members in attendance. This Society went further, and by vote instructed the Permanent Secretary to communicate with the President of every County Medical Society in the State and urge concurrent action. If this distant State lend such enthusiastic and material aid to our undertaking, may it not be expected that all others will manifest similar interest, which ought to be proportionally greater as the birth-place and home of Rush and the site of the contemplated statue are approached?

Unless the several States and Territories can be represented in the Committee by men who will engage to thoroughly canvass each respectively, the work of collecting funds must chiefly devolve upon the officers and an executive subcommittee, who, through the columns of medical journals and the coöperation of medical associations, will endeavor to reach the greatest possible number of our professional *confères*. It will obviate the necessity for intermediary correspondence if all subscriptions and donations are at once mailed to Dr. Toner, the Treasurer, as above suggested; and in this connection it may be proper to state, in reply to numerous inquiries, that the limitation of subscriptions to one dollar is not intended to prevent the donation of any other sum which those interested in the project may desire to make.

After previous recitals of the eminent services of this "greatest physician this country has ever produced,"—of this learned and distinguished man of letters and science; this indefatigable philanthropist, sanitarian and social reformer; this illustrious states-

man, Revolutionary military officer and patriot, it is unnecessary to add another word in explanation why the effigy of Benjamin Rush should have a place in the National gallery beside those of the other founders of this Republic.

I have to regret that the exigencies of the naval service to which I belong have not permitted my attendance at Cincinnati, and though, at no distant day, I entertain the hope of a field of duty less remote, if the Association believe it will be for the better interests of this undertaking to place the chairmanship of this Committee in other hands, I beg to be permitted to resign my trust for this purpose, assuring my fellow-members of my undiminished interest in the realization of a project which I had the honor of first proposing to them, four years ago, at Washington. To the Medical Corps of the Army will ever remain the credit of having inaugurated and established the great National Medical Library and Museum which now graces the capital of this country. As an officer of the Medical Corps of the Navy, I shall always feel proud of having suggested and, in however feeble a way, contributed towards placing at the portal of that magnificent and unrivalled depository of medical literature, science and art, the enduring testimonial of one who so honored his profession that his name is inseparable from American medicine, and so honored his country that his exemplary life is part of that country's history. Respectfully submitted.

ALBERT L. GIHON, M.D.,

Chairman of Rush Monument Committee.

The Treasurer of the Rush Monument Committee begs leave to submit this his second annual report of the financial condition and prospects of the movement to collect sufficient funds to erect an appropriate monument to the memory of this great physician. As far as I can discover, the project is approved by all who have given a moment's thought to it, and no physician who loves his profession ever declines to give, when asked by a duly authorized agent. The Committee has upon it a member resident in each State and Territory, the Army, Navy and Marine Hospital Service, with a view to reach the whole profession, yet the Treasurer has only heard from the following States and Territories during the year:

Arkansas, California, Dakota, District of Columbia, Maryland, Pennsylvania, South Carolina, Tennessee, Wisconsin, U. S. Army and U. S. Navy.

The Chairman of the Committee, A. L. Gihon, Surgeon U. S. Navy, in his report gives a succinct account of the efforts of the Committee in the past, and its hopes in the future, to meet the reasonable expectations of the American Medical Association in this enterprise to which it has committed itself. I shall therefore confine my report strictly to the financial condition of the movement. There was remaining in the treasury at the time of my last report \$392. The whole sum which has reached the Treasurer since his last report is \$498, and the total outlay since last report \$34 73. There are practically no bills outstanding and there is now in the bank-book of the Treasurer \$709.19. The Pennsylvania State Medical Society has, I am informed, made a subscription

of \$500 to be paid in annual installments, \$100 of which has been paid and is credited in this report. It is also reported that the Michigan State Medical Society has voted \$100; this has not yet reached the Treasurer. Contributions by the medical men attending the State Medical Society of California during last month amounted to \$105 and were made to Dr. G. G. Tyrrell, member of the Rush Monument Committee for that State. This amount was sent to me in two postal orders. For some cause not yet explained, the post-office in Washington has not been informed, up to the time of my leaving, to pay these orders. In my report I have treated this amount as actually in my hands or in bank, for I had confidently expected it to be paid each day. All I can now do is to exhibit the post-office orders which are pinned to the bank-book as my authority, which I do. The bank-book of the Rush Monument Committee is herewith submitted.

The rules adopted by the Committee for husbanding the funds collected for the monument have been strictly observed. They are, in brief, that all moneys received shall be deposited by the Treasurer in the bank of Riggs & Co., of Washington, to the credit of the Rush Monument Committee, that no debts shall be contracted by individual members of the Committee not authorized by a vote of the Committee except the necessary expenses of postage and printing, and these must have the concurrent sanction of the President, Secretary and Treasurer; and that no moneys shall be drawn from the treasury except upon vouchers bearing the endorsements of the President and Secretary of the Committee.

Appended to this report is an alphabetical list of all the contributions since last report, with their post-office address and the amount given by each:

A. K. Agata,¹ Oakland, Cal.; C. H. Allen, Centerville, Cal.; F. C. Amis, St. Louis, Mo.; J. A. Anderson, San Francisco, Cal.; J. D. Arnold, San Francisco, Cal.; Wm. A. Inhead, Philadelphia, Pa., \$100.

C. G. Bailey, Santa Anna, Cal.; J. E. S. Baker, Angel's Camp, Cal.; A. Barhan, San Francisco, Cal.; D. N. Bartollette, U. S. N.; J. B. Baylor, Baltimore, Md.; H. M. Beck, Wis.; B. P. Bellamy, Livermore, Cal.; C. E. Blake, San Francisco, Cal.; J. M. Boyd, Knoxville, Tenn.; J. B. Bratton, Yorkville, S. C.; L. Bremer, St. Louis, Mo.; J. M. Briceland, Shausta, Cal.; C. E. Briggs, St. Louis, Mo.; W. A. Briggs, Sacramento, Cal.; W. E. Briggs, Sacramento, Cal.; H. J. Brodie, Cambria, Cal.; C. B. Brown, San Francisco, Cal.; O. O. Burgess, San Francisco, Cal.

N. G. Cabell, U. S. N.; M. A. Cachot, San Francisco, Cal.; M. Campbell, Knoxville, Tenn.; C. G. Cargill, Lakeport, Cal.; L. Carpenter, Lakeport, Cal.; N. B. Carson, St. Louis, Mo.; R. Chatham, Nashville, Tenn.; M. M. Chipman, San Francisco, Cal.; Geo. Chismore, San Francisco, Cal.; W. D. Clark, Cottonwood, Cal.; J. M. Coffman, Black Rock, Ark.; K. B. Cole, San Francisco, Cal.; C. M. Cooper, Cleveland, Tenn.; John Curwin, Warren, Pa.; \$10; Clinton Cushing, San Francisco, Cal.

H. C. Dalton, St. Louis, Mo.; G. W. Davis, San Francisco, Cal.; T. A. Davis, San Diego, Cal.; H. L. Day, Wis.; C. Deaderich, Knoxville, Tenn.; J. O'F. Delaney, St. Louis, Mo.; T. B. DeWitt, San Francisco, Cal.; Wm. Dickinson, St. Louis, Mo.; R. Douglass, Nashville, Tenn.; C. M. Drake, Knoxville, Tenn.; F. C. Durant, San Quinton, Cal.

C. N. Ellinwood, San Francisco, Cal.; T. P. Eagle, Folsom, Cal.; R. W. Earle, Wis.; J. S. Eastman, Berkly, Cal.; Jos. D. Eggleston, Worsham, Va.; Wm. G. Eggleston, Chicago, Ill.

Henry Ferrier, San Francisco, Cal.; F. N. Foot, Lockford, Cal.; E. J. Fithell, Petaluma, Cal.; W. E. Fithell, San Francisco, Cal.; C. C. Fite, Knoxville, Tenn.; G. I. Fitzgibbon, San Francisco, Cal.; F. R. Fry, St. Louis, Mo.

A. M. Gardner, Calatoga, Cal.; Henry Gibbons, Jr., San Francisco, Cal.; W. P. Gibbon, Alameda, Cal.; F. A. Glasgow, St. Louis, Mo.; G. W. Graves, Petaluma, Cal.; J. D. Griffith, Kansas City, Mo.; W. A. Grover, Berkly, Cal.

J. R. Hall, Marshall, Mo.; Geo. Halley, Kansas City, Mo.; H. N. T. Harris, U. S. N.; A. J. Hart, Modesto, Cal.; H. H. Hart, San Francisco, Cal.; H. N. Harlister, Victor, Ark.; W. J. Hatcher, Imboden, Ark.; E. H. Higbee, St. Louis, Mo.; T. Hoppel, Trenton, Tenn.; H. O. Hirschfelder, San Francisco, Cal.; W. H. A. Houghdon, San Francisco, Cal.; Geo. Homan, St. Louis, Mo.; K. J. Howard, San Francisco, Cal.; S. D. Howard, San Francisco, Cal.; T. W. Huntington, Sacramento, Cal.

E. H. Irwin, Wis.

J. W. Jackson, Kansas City, Mo.

F. B. Kane, San Francisco, Cal.; C. G. Kenyon, San Francisco, Cal.; W. W. Kerr, San Francisco, Cal.; A. K. Kinloch, Charleston, S. C.; \$5; S. B. P. Knox, Santa Barbara, Cal.

G. L. Bruce, San Francisco, Cal.; G. D. Ladd, Wis.; L. C. Lane, San Francisco, Cal.; T. S. Latimer, Baltimore, Md.; W. M. Lawler, San Francisco, Cal.; J. L. Le Tourneau, San Francisco, Cal.; P. Lee, Merced, Cal.; J. R. Lemen, St. Louis, Mo.; J. M. Leete, St. Louis, Mo.; E. B. Lenoir, Lenoir, Tenn.; W. B. Lewitt, San Francisco, Cal.; Walter Lindley, Los Angeles, Cal.; Henry Lipincott, U. S. A.; W. F. Lynch, Walnut Creek, Cal.; E. V. Lonigo, San Francisco, Cal.; S. F. Long, San Francisco, Cal.; J. Lutz, St. Louis, Mo.; Douglas Luce, Banta, Cal.

W. D. McCarthy, San Francisco, Cal.; W. M. McFarlane, Agnew, Cal.; W. P. McNutt, San Francisco, Cal.; W. H. Mays, Stockton, Cal.; L. Melton, Wheatland, Cal.; E. S. Merritt, San Francisco, Cal.; G. W. Merritt, San Francisco, Cal.; John Montgomery, San Francisco, Cal.; M. W. Moody, San Francisco, Cal.; G. F. Morgan, San Francisco, Cal.; J. F. Morse, San Francisco, Cal.; D. McLe Miller, Wis.; J. H. Miller, Redding, Cal.; H. H. Mudd, St. Louis, Mo.; A. Munro, Wis.; J. C. Mulhall, St. Louis, Mo.; B. Norris, Surg. U. S. A.; J. F. Noyes, Detroit, Mich.; H. S. Orme, Los Angeles, Cal.

J. H. Parkinson, Sacramento, Cal.; F. H. Payne, Berkly, Cal.; Pennsylvania State Medical Society, \$100; T. Phillips, Stockton, Cal.; R. H. Plummer, San Francisco, Cal.; G. H. Powers, San Francisco, Cal.; A. H. Pratt, Oakland, Cal.; G. J. Preston, Baltimore, Md.; T. F. Prewitt, St. Louis, Mo.; T. H. Pinkerton, Oakland, Cal.

G. P. Reynolds, Alameda, Cal.; J. G. Riely, Santa Anna, Cal.; J. Rosenstine, San Francisco, Cal.; T. Ross, Woodland, Cal.; E. B. Robertson, Jackson, Cal.; H. D. Robertson, Yreka, Cal.; J. W. Robertson, Napa, Cal.; M. Rosenheimer, Wis.

E. R. C. Sargent, San Francisco, Cal.; D. D. Saunders, Memphis, Tenn.; W. J. Scott, Cleveland, O.; A. Shirk, San Francisco, Cal.; J. V. Shoemaker, Philadelphia, Pa.; J. Simpson, San Francisco, Cal.; Jos. Sampson, San Francisco, Cal.; Jules Simon, San Francisco, Cal.; C. Sundberg, San Francisco, Cal.; J. H. Soper, San Francisco, Cal.; South Carolina Med. Association, \$50; J. H. Stallara, San Francisco, Cal.; J. Steer, St. Louis, Mo.

C. A. Thompson, Jefferson City, Mo.; W. S. Thome, San Jose, Cal.; C. A. Todd, St. Louis, Mo.; J. R. Todd, Gridley, Cal.; M. C. Toole, San Francisco, Cal.; H. Tuholske, St. Louis, Mo.; G. G. Tyrrell, Sacramento, Cal.

C. C. Valle, San Diego, Cal.; G. A. Vogt, Biehle, Mo.; Wm. Varian, Titusville, Pa.

I. M. Wanzer, San Francisco, Cal.; Warren Co. Med. Society, Pa., \$10; C. V. Westlake, Red Bluff, Cal.; W. J. Watkins, Walnut Ridge, Ark.; J. P. Widnay, Los Angeles, Cal.; A. P. Whittle, San Francisco, Cal.; DeF. Willard, Philadelphia, Pa., \$5; Wisconsin State Med. Society, \$50.

All of which is respectfully submitted. J. M. TONER,
Treasurer Rush Monument Committee.

On motion, these reports were received, and the usual auditors were requested to examine the report of the Treasurer.

The Permanent Secretary then read the report of Dr. R. J. Duglison, Treasurer of the Association

¹ When not otherwise specified the amount is \$1.

REPORT OF THE TREASURER.

I have the honor to report, as Treasurer of the Association, that the receipts from all sources since the last annual report, presented at Chicago in June, 1887, have amounted to \$25,649.90; the expenditures, as per itemized account accompanying this report, to \$23,242.07; leaving a balance in the treasury at this date of \$2,407.83. Copies of the *Transactions* of the Association have been sold during the past year from the office of publication amounting in all to \$125.00.

All of which is respectfully submitted.

RICHARD J. DUNGLISON, *Treasurer*.

Dr. Richard J. Dunglison, Treasurer, in account with the American Medical Association.

1887.	Dr.
June 7, to cash balance, as per report at Chicago meeting....	\$1,403.77
June 11, to amount received from delegates and members at Chicago.....	2,203.00
1888.	
May 5, to amount of dues from members to date.....	7,643.15
May 5, to amount received from office of publication to date....	11,391.96
Cr.	\$25,649.90
1887.	
June 15, by cash paid Dr. Wm. B. Atkinson, Perm. Sec'y, expressage, telegrams, postage and traveling expenses to date.....	\$ 148.65
June 17, by cash paid Wm. F. Fell & Co., printing postal cards, and stamped envelopes.....	45.60
June 18, by cash paid Dr. Richard J. Dunglison, Treasurer, expenses of travel, postage, telegrams, etc.....	104.75
July 14, by cash paid Dr. C. G. Smith, Chairman Com. of Arrangements, Chicago, rental of halls, printing, etc.....	704.86
Aug. 15, by cash paid Wm. F. Fell & Co., printing slips, cards, stamped envelopes.....	40.13
Aug. 16, by cash paid Dr. E. S. F. Arnold, Treasurer International Med. Congress, by resolution of Association.....	1000.00
Aug. 30, by cash paid Wm. F. Fell & Co., stamped envelopes and postals.....	12.50
Aug. 31, by cash paid for postage, expressage and collection charges to date.....	30.45
Sept. 21, by cash paid for stationery, postage, etc.....	9.13
Sept. 24, by cash paid Wm. F. Fell & Co., printing slips, stamped envelopes, etc.....	44.30
Nov. 10, by cash paid Wm. F. Fell & Co., printing note heads and slips, stamped envelopes.....	27.01
Nov. 12, by cash for postage, collection charges, P. O. box, circulars, etc.....	36.14
Nov. 28, by cash paid Dr. C. H. A. Kleinschmidt, Librarian, freight on books.....	1.05
Dec. 13, by cash for collection charges, postage, addressing circulars, etc.....	12.95
Dec. 13, by cash paid Wm. F. Fell & Co., printing slips, stamped envelopes, etc.....	25.55
Dec. 22, by cash paid Wm. F. Fell & Co., postal cards and stamped envelopes.....	13.50
1888.	
Feb. 27, by cash paid for collection charges on \$1405. drafts deposited for collection.....	2.10
March 17, 1 y cash for stationery, postals, rental of P. O. box, collection charges, etc.....	17.17
May 7, 2 y cash publication expenses of the Journal of the Association to date.....	14,553.93
March 7, by cash paid Dr. N. S. Davis, editorial work to date.....	6767.00
May 7, by balance.....	2,407.83
	\$25,649.90

CINCINNATI, MAY 10, 1888.

This certifies that we have examined the accounts and vouchers of the treasurer to this date, and find the same correctly cast and properly vouched.

(Signed)

ALONZO GARCELON,
L. S. McMURTRY,
W. T. BRIGGS.

On motion it was received and placed on file.

The Permanent Secretary then read the

REPORT OF THE LIBRARIAN,

Dr. C. H. A. Kleinschmidt as follows:

I have the honor to present the accompanying catalogue of additions to the Library of the Associa-

tion since my last published report. It will be seen, that the catalogue covers the period from May 1, 1886, to May 1, 1888, for the reason that my last report made to the Association in 1887, was somehow lost after having been presented.

In the period specified 369 distinct titles have been added to the Library, exclusive of Transactions of Societies Reports of Boards of Health, and Medical Journals not previously received and catalogued as such. The Library therefore at present contains about 7500 volumes, representing 2850 titles.

In conclusion, I would respectfully suggest that the subscription to the *Index Medicus* for the current year be continued, and that the sum of \$10 be appropriated to that end.

Respectfully submitted,

C. H. KLEINSCHMIDT,
Librarian.

On motion it was received, and the amount, (\$10) requested was granted.

The special order being the consideration of the amendment laid over from yesterday, on motion of Dr. N. S. Davis it was laid on the table until the next annual meeting, on account of delay in receiving printed copies as ordered yesterday.

Several motions having been offered on the same, the President decided them out of order as the subject had been disposed of.

The following amendment was offered by Dr. N. S. Davis, which lies on the table until the next annual meeting: "Strike out the last clause or paragraph of Section VII, relating to individually affixing names to the constitution and regulations of this Association."

Dr. H. N. Moyer, of Ill., offered the following amendments which lie on the table until the next annual meeting:

There shall be created a Section of Pharmacy and Materia Medica which shall have its own autonomy in like manner as the Section in Dental and Oral Surgery. Reputable members of State Pharmaceutical Associations shall be eligible as members of the same on presentation of credentials from their State Secretary, but shall have no voice in the general sessions of the Association. The Section of Surgery shall hereafter be denominated the Section of Surgery and Gynecology. There shall be created a Section of Anatomy and Physiology. The Section of Obstetrics and Diseases of Women shall be abolished. The Section of Diseases of Children shall hereafter be denominated the Section of Obstetrics and Pediatrics. The Section of Dermatology and Syphilography shall hereafter be denominated the Section of Dermatology and Genito-Urinary Diseases. The Section of Medical Jurisprudence shall hereafter be denominated the Section of Mental and Nervous Diseases. The Section of State Medicine shall hereafter be denominated the Section of State Medicine and Medical Jurisprudence. The Section of Practice of Medicine, Materia Medica and Physiology shall hereafter be denominated the Section of Internal Medicine.

On motion of Dr. J. M. Keller, of Arkansas it was *Resolved*, That in future, each Delegate or perma-

nent member, shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section Officers.

He stated that he had offered this because it was found that members voted in several Sections, thus aiding in the election of officers of more than one Section.

Dr. W. H. Daly, Pa., moved to rescind the action had yesterday, permitting the Sections to meet at 11 A.M.

After some discussion, it was adopted.

Dr. W. Brodie, Mich., offered a motion that in future the Committee of Arrangements do not provide for an exhibition.

On motion of Dr. I. N. Love, Mo., the subject was laid on the table.

Dr. Toner, of the Committee on Necrology, announced that his report had been published in *THE JOURNAL* from time to time.

Dr. A. Garcelon, Me., announced for the auditors that they had examined the accounts of Dr. Toner, Treasurer of the Rush Monument Fund, and found them correct.

A communication was presented by Dr. I. N. Quimby, N. J., from the Woman's Christian Temperance Union.

On motion, it was laid on the table.

On motion, the Association adjourned to meet at 10 A.M., on Friday.

FRIDAY, MAY 11—FOURTH DAY.

THE PRESIDENT called the Association to order at 10 A.M.

The Address in State Medicine was read by Dr. H. P. WALCOTT, Mass.

On motion of Dr. Toner, it was referred for publication, and thanks rendered to the author. (See *THE JOURNAL*, May 26.)

Dr. N. S. Davis read a brief abstract of the report of the *Standing Committee on Meteorological Conditions*.

On motion, the report was referred for publication. Dr. I. N. Quimby, N. J., read the report of *Committee on Feticide*.

After some discussion, on motion of Dr. W. Bishop, Pa., the whole subject was laid upon the table.

Dr. H. O. Marcy, Mass., read the report of the *Committee on duties commonly exercised by Coroners*.

On motion of Dr. S. T. Armstrong, U. S. Marine Hospital Service, the report was received and the Committee continued.

The Permanent Secretary read the names of the newly-elected

OFFICERS OF SECTIONS.

Practice of Medicine, etc.—F. C. Shattuck, Boston, Mass., Chairman; G. A. Fackler, Cincinnati, Ohio, Secretary.

Surgery and Anatomy.—N. P. Dandridge, Cincinnati, Ohio, Chairman; W. O. Roberts, Louisville, Ky., Secretary.

Obstetrics and Diseases of Women.—W. H. Wathen, Louisville, Ky., Chairman; A. B. Carpenter, Cleveland, Ohio, Secretary.

State Medicine.—J. Berrien Lindsley, Nashville, Tenn., Chairman; S. T. Armstrong, U. S. Marine Hospital, N. Y., Secretary.

Ophthalmology, Otology and Laryngology.—Geo. E. Frothingham, Ann Arbor, Mich., Chairman; G. C. Savage, Nashville, Tenn., Secretary.

Laryngology and Otology.—W. H. Daly, Pittsburg, Pa., Chairman; E. Fletcher Ingalls, Chicago, Ill., Secretary.

Diseases of Children.—J. A. Larrabee, Louisville, Ky., Chairman; C. J. Jennings, Detroit, Mich., Secretary.

Medical Jurisprudence.—W. Kiernan, Chicago, Ill., Chairman; T. C. Evans, Baltimore, Md., Secretary.

Dermatology and Syphilography.—L. Duncan Bulkley, N. Y., Chairman; W. T. Corlett, Cleveland, Ohio, Secretary.

Oral and Dental Surgery.—F. H. Rehwinkel, Chillicothe, Ohio, Chairman; E. S. Talbot, Chicago, Ill., Secretary.

The Permanent Secretary then read the following from the Section on State Medicine:

To the Secretary of the American Medical Association, Sir:—I have the honor to report that the Section on State Medicine respectfully recommends the passage of the following resolution by this Association.

Resolved, That the American Medical Association urges upon the House of Representatives of the Congress of the United States, the necessity and importance of the immediate passage of Senate Bill No. 2493—"To Perfect the Quarantine Service of the United States"—which bill has passed the Senate and is now pending in the House of Representatives, in order to make provision for protection against the introduction of contagious diseases before the approaching summer.

Very respectfully,

S. T. ARMSTRONG, *Sec'y of Section on State Medicine*.
Cincinnati, May 11, 1888.

On motion, this resolution was adopted as the sense of the Association.

Dr. J. M. Keller, of Ark., read the following notice for amending the By-laws, viz: "To change the By-law whereby the officers of Sections are elected by the Sections."

This will lie over till next meeting.

Dr. W. Porter, Mo., and others called up the amendment to the Constitution offered by Dr. C. Seiler, Pa., in 1884, and now asked for by the Section on Ophthalmology.

The action was agreed to, and a new *Section on Laryngology and Otology* was created.

The Permanent Secretary read the list of members appointed as delegates abroad, as follows:

R. H. Plummer, San Francisco, Cal.; N. S. Davis, Chicago, Ill.; J. J. Chisolm, Baltimore, Md.; L. A. Sayre, N. Y.; J. B. Hamilton, D. C.; C. C. Vaughan, Mich.; J. E. Owens, Chicago, Ill.; S. J. Jones, Chicago, Ill.; H. A. Kelly, Philadelphia, Pa.; A. E. Hoadley, Chicago, Ill.; W. H. Myers, Ft. Wayne, Ind.; F. E. Waxham, Chicago, Ill.; J. V. Shoemaker, Philadelphia, Pa.; D. A. K. Steele, Chicago, Ill.; Alex. McAllister, Camden, N. J.; Ephraim Cutter, New York.

After much discussion, on motion of Dr. N. S. Davis, the report by Dr. Quimby, on *Fetidae*, was taken from the table and referred to the Section on State Medicine.

In accordance with certain suggestions in the President's Address, Dr. Quimby brought up the subject of legislation for State Boards of Examiners.

Dr. Armstrong stated that such a committee already existed.

Dr. Toner moved to refer this matter to that committee.

On motion of Dr. J. H. Murphy, of Minn., the whole subject was laid on the table.

On motion of Dr. S. F. Forbes, Ohio, it was

Resolved, That the American Medical Association approve of the movement looking to the celebration in Washington, in 1892, of the 400th Anniversary of the discovery of this Continent by Columbus, and the establishment there of a Museum of the Arts, Industries, and Antiquities of the Free Americans, and hereby request Congress to pass the necessary legislation by appropriations to this end.

On motion of Dr. F. Woodbury, Pa., the following was unanimously adopted:

WHEREAS, The delegates and members of the American Medical Association at the conclusion of its 39th annual meeting have been very hospitably received and entertained by the local profession and citizens of Cincinnati; and

WHEREAS, Owing to the well directed efforts of the Committee on Entertainment and their able colleagues, this has proved to be one of the most harmonious and enjoyable meetings ever held in the history of this Association; therefore

RESOLVED: That the heart-felt acknowledgment of this meeting be tendered to the physicians of this city; to the *Apollo Club*, and to all who have contributed towards the great success of this session; and especially are our thanks due, and we take pleasure in this manner to express them, to the rare coterie of ladies, who have given brilliancy to the social entertainments by their charming presence. They are the best jewels in the crown of this metropolis, which is destined to be the "Queen City" of the East as well as "the West."

On motion of Dr. Toner, the thanks of the Association were given Dr. Garnett, for the able manner in which he had presided. Dr. Garnett acknowledged this in a brief and appropriate address.

On motion of Dr. W. H. Daly, Pa., the Association then adjourned to meet in Newport on the 1st Tuesday of June, 1889.

WM. B. ATKINSON,
Permanent Secretary.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MAY 19, 1888, TO MAY 27, 1888.

Col. Chas. Sutherland, Medical Director, to inspect the medical department at St. Francis Bks., Fla., Ft. Barrancas, Fla., Mt. Vernon Bks., Ala., and Jackson Bks., La. S. O. 100, Div. Atlantic, May 19, 1888.

Major F. L. Town, Surgeon, U. S. Army, Post Surgeon at the Post of San Antonio, Tex., will take charge of the office of the Medical Director at those headquarters, and perform the duties of that officer during his absence on leave. S. O. 51, Dept. Texas, May 11, 1888.

Major Harvey E. Brown, Surgeon, directed to continue on duty at Ft. Barrancas, Fla., until further orders. S. O. 115, A. G. O., May 18, 1888.

Major J. P. Kimball, Surgeon, leave of absence extended two months. S. O. 117, A. G. O., May 21, 1888.

Capt. Geo. McCreery, Asst. Surgeon, to accompany Seventh Cavalry from Ft. Meade, D. T., to Ft. Riley, Kan. From Ft. Riley he will return to Ft. Meade. S. O. 42, Dept. Dak., May 17, 1888.

Capt. M. C. Wyeth, Asst. Surgeon, will be relieved from duty at Ft. Barrancas, Fla., at the expiration of his present leave of absence, and will report in person to the commanding officer Ft. Huachuca, Ariz., for duty at that post. S. O. 115, A. G. O., May 18, 1888.

First Lieut. Wm. L. Kneedler, Asst. Surgeon, will accompany from Ft. Snelling, Minn., that portion of the Twenty-fifth Infantry detailed for Ft. Shaw, M. T. From Cascade, M. T., he will accompany that portion of the Third Infantry *en route* from Ft. Shaw, M. T., to Ft. Snelling, Minn. S. O. 49, Dept. Dak., May 14, 1888.

First Lieut. R. L. Robertson, Asst. Surgeon, will accompany from Ft. Keogh, M. T., the Fifth Infantry to the Dept. of Texas, returning to his station on the completion of the duty. S. O. 43, Dept. Dak., May 18, 1888.

First Lieut. C. B. Ewing, Asst. Surgeon, will accompany the Twenty-second Infantry, as medical officer, to the Dept. of Dak., returning to his station on the completion of the duty. S. O. 56, Dept. Wis., May 17, 1888.

Par. 12, S. O. 49, Dept. Tex., May 5, relative to First Lieut. H. S. T. Harris, Asst. Surgeon, accompanying Eighth Cavalry to Dept. of Dak., is amended by par. 1, S. O. 50, Dept. Tex., May 9, 1888. Par. 1, S. O. 50, Dept. Tex., May 9, is revoked by par. 1, S. O. 51, Dept. Tex., May 11, 1888.

First Lieut. H. S. T. Harris, Asst. Surgeon, will be relieved from duty at Camp Pena, Col., and proceed to San Antonio, where he will report to commanding officer battalion Sixteenth Infantry for duty as medical officer with that battalion to its destination in Dept. Platte. Upon completion of this duty, he will return to his proper station, Camp Pena, Colorado, Tex. S. O. 51, Dept. Tex., May 11, 1888.

First Lieut. Leonard Wood, Asst. Surgeon, leave of absence extended two months. S. O. 114, A. G. O., May 17, 1888.

First Lieut. W. B. Banister, Asst. Surgeon, granted leave of absence for two months, with permission to apply for an extension of twenty-seven days. S. O. 119, A. G. O., May 23, 1888.

Par. 15, S. O. 49, Dept. Tex., c. s. (relative to First Lieut. Paul Clendenin, Asst. Surgeon, accompanying Sixteenth Infantry to its destination), is revoked by S. O. 51, Dept. Tex., May 11, 1888.

First Lieut. Paul Clendenin, Asst. Surgeon, will proceed from Ft. McIntosh to Ft. Davis and report to commanding officer Eighth Cavalry, for duty as medical officer with that regiment on its march to Ft. Concho, from which place Lieut. Clendenin will return to his proper station. S. O. 51, Dept. Tex., May 11, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 26, 1888.

P. A. Surgeon S. H. Dickson, detached from the receiving ship "Dale," and to Marine Bks., Washington, D. C.

P. A. Surgeon F. S. Nash, ordered to the receiving ship "Dale" in addition to present duties.

Surgeon Melancthon L. Ruth, granted one year's leave of absence from date.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE THREE WEEKS ENDING MAY 26, 1888.

Surgeon Walter Wyman, leave of absence extended fourteen days. May 22, 1888.

Asst. Surgeon G. M. Magruder, relieved from duty at Marine Hospital, Chicago, detailed as medical officer revenue bark "Chase," during summer season. May 19, 1888.

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No. 23.

ADDRESS IN MEDICAL JURISPRUDENCE.

THE STATUS OF MEDICAL JURISPRUDENCE AS AFFECTING THE MEDICAL PROFESSION AND THE LAITY.

*Address delivered at the Thirty-ninth Annual Meeting of the
American Medical Association, May 11, 1888.*

BY E. M. REID, M.D.,

OF BALTIMORE, MD.,

CHAIRMAN OF THE SECTION ON MEDICAL JURISPRUDENCE.

A by-law of the American Medical Association requires that "The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including such suggestions in regard to improvements in methods of work, and present on the first day of its annual meeting, the same to the Section over which he presides." To the majority of the Chairmen this should be a comparatively easy task, inasmuch as the advancements in their respective branches are advertised through the media of the medical journals and other publications, are considered by the medical schools and colleges throughout the world, and if deemed worthy, are taught by them.

But to the Chairman of a Section of Medical Jurisprudence in America the work is more difficult because of the indifference manifested by our schools, and the lack of any considerably garnered modern information from which to draw; a deficiency that is, in this country, the result of the limited association of law with medicine. Therefore, the wisdom shown by the American Medical Association in creating this Section is deserving of more than ordinary commendation, because it will not only stimulate to greater activity the workers already in the field of forensic medicine, but will bring in many more. There is not at present sufficient incentive to induce the lawyer to investigate the philosophy or latent principles of the law; there is still less to spur him to inquire into that of medicine. Consequently, he dips no deeper into the troubled waters of even his special branch of science than is necessary to enable him to fill his coffers. Therefore many of the healing qualities of the law though not undiscovered are unapplied.

The busy practitioner of medicine has hitherto imagined he had no time to devote to any division

of science which compelled him to go far beyond the pale of symptomatology and therapeutics, and which offered no direct emoluments to compensate him for the time and study that would be diverted from that which he has been inclined to consider the legitimate bounds of his profession. For this reason, and because of the scarcity in almost any form of medico-legal laboratories to which could be carried the crude gleanings of the hardly pressed but enterprising physician, to be so wrought and polished that they could be intelligently applied to law as well as to medicine, much useful information has been lost to the world. And a branch of jurisprudence, second in importance to none, capable of vast expansion, and which should be one of the most useful and active factors of human society is comparatively unavailable.

MEDICAL JURISPRUDENCE A PROFESSION.

That live journal, the Philadelphia *Medical Register*, in an admirable editorial on the subject, says: "It would best become the dignity of science and truth if legal-medicine were held as a definite and distinct profession, in which the emoluments were sufficient to justify a physician in abandoning all other practice in the interest of this special work."

RESPONSIBILITY OF THE PHYSICIAN.

The holding of legal-medicine as a "definite and distinct profession," should now, and I sincerely hope will, in the near future, be possible. But until that period arrive, the doctor who is zealous for the honor of his profession and his own reputation, must exercise a more scrupulous vigilance than has hitherto been supposed requisite. He can no longer be satisfied with the daily writing of so many recipes, or the distribution of so many pills or plasters. To be successful he must not merely keep abreast the times, but must keep, be it ever so little, in advance of them. He must be active in his efforts to discover new worlds in medical science, as well as bold and aggressive in their exploration. He must be fearless but also judicious in the adaptation of new principles, and that he may be both, he can no longer ignore the fact that he must at least possess sufficient knowledge of the law to enable him to distinguish between that which is lawful and that which is unlawful in the application of modern medicine, that he may successfully defend himself against the attacks of the ravening wolves and vultures which will be all the more likely, because of his independent advancement and the shaking off the shackles of old theories, to infest

his path and to endeavor to prey upon him. He must confront the possibility that at any moment the aid of the law may be invoked to seek to hold him responsible for the consequences that may ensue, not only from the use of newly-discovered drugs, but from even the most intelligent administration of well established remedies.

Therefore, when giving medicines, such as sodium salicylate, chloral, or others of like nature, which are liable to be followed by delirium, hallucinations, illusions, etc., it will be best to surround the patient with such safeguards as will prevent him from injuring himself or other persons. He must also bear in mind that many customs though founded on a humane basis, can no longer be followed with impunity; *e. g.*, the physician cannot now safely conceal his lancet, and, without having given his patient warning, plunge it into an abscess; nor, even after the consent of the patient has been given to be anesthetized, in order to have one eye removed, is it advisable for the oculist to remove both, no matter what grounds he may have for believing it necessary to do so. The consent of the patient to the removal of the second eye is as essential as it was to that of the first. After craniotomy and delivery should life remain in the child the accoucher may not on any grounds complete the work of destruction begun in utero, for the moment the safety of the mother is no longer involved the rights of the fœtus, temporarily in abeyance, are restored, and the law recognizes the sanctity of that life no matter how feeble the existence or how monstrous the form. The time may not be far distant when the operation of craniotomy will have to be justified, not upon a mere assertion of impaction, but upon a basis of actual measurement, and the pelvimeter will have to precede the cranioclast. The physician should also know that the common law does not formally recognize the induction of premature labor, and when his State has failed to afford him protection by statutory provision, unless he exercise extreme caution he may find himself in a situation from which it might be difficult to escape creditably.

Tidy says (Vol. 3, W. L., page 100): "It is manifest that if any question should arise or action at law be commenced against a medical man either for inducing abortion, or for manslaughter if the child born alive died because it was immature, it would be necessary to show (1) that there was a necessity for the operation, the life of the mother being at stake, and the operation being less to be feared than natural delivery; and (2) that his action was *bona fide*." Now the constantly increasing number of conditions which are daily alleged to be sufficient grounds to justify the induction of premature labor may render it hard for a practitioner, in a criminal prosecution, to successfully defend himself against a charge of inadequacy of cause for its performance; therefore, to quote again from Tidy: "We strongly urge upon medical men (1) Not to induce premature labor or abortion without the most mature consideration. (2) Not to undertake it until after consultation with a second practitioner. (3) In any case to have the full consent, in writing if possible, of the husband or guardian."

The trouble that may accrue to the physician from neglecting to observe these rules is clearly shown by Taylor, page 592, where he says: "This practice has been condemned as immoral and illegal, but it is impossible to admit that there can be any immorality in performing an operation to give a chance of saving the life of a woman when by neglecting to perform it it is almost certain that both herself and the child will perish. Any question respecting its illegality can not be entertained; for the means are administered or applied with the *bona fide* hope of benefiting the female, and not with any criminal design." Yet he says further on: "By non-observance of these rules (which I quoted above) the general practitioner, in the event of the death of the woman or child exposes himself to a prosecution for a criminal offense, from the imputation of which even an acquittal will not always clear him in the eyes of the public. Within a recent period several practitioners have been tried upon charges of criminal abortion who had obviously neglected to adopt those simple measures of prudence, the observance of which would have been at once an answer to a criminal charge. Because one obstetric practitioner of large experience may have frequently and successfully induced premature labor without observing these rules and without any imputation on his character, this cannot shield another who may be less fortunately situated."

The physician must also remember that he is more liable to have a charge of criminal abortion brought against him when the woman is single than when she is married; the law in such a case regarding the operation with extreme suspicion; yet the need for its performance may be as imperative in the case of the husbandless female as of her upon whose marriage was set the seal of both Church and State.

The nature of many diseases and injuries is such as to compel the medical attendant to quickly determine his course of action entirely from a medical or surgical standpoint. On the other hand, there are cases in which he must pause long enough to consider his treatment from other standpoints as well as those of medicine and surgery, *e. g.*, where marital rights are involved, as when a lacerated cervix uteri is closed to a pinhole to prevent further conception, at the request of the patient, but without the consent of the husband. The operation if successful would, I think, make the gynecologist liable to an action at law, for procreation being one of the principal objects of matrimony, the closing of the wound when not contra-indicated by physical conditions, should be made in accordance with that doctrine; so, also, where the work of the surgeon may impair or destroy the social, civil and political rights of one of those most unfortunate of beings, hermaphrodites.

A striking illustration of the possibility of so doing is given by Taylor, page 718, in the history of an operation performed by one of the most eminent surgeons of the United States upon an infant whose sexual organs were imperfect with predominance of those of the male: "The surgeon considered that for the child's future welfare and happiness it would be better that it should have no testicles at all than it should retain them under such an imperfect devel-

opment of the other organs. He therefore removed them by operation from the labia or divided scrotum, and had the dissatisfaction to find that they were perfectly formed in every respect, and that the spermatic cords were quite natural. Three years subsequent to the operation it was found that emasculation was complete, for the disposition and habits of the being had materially changed and were those of a girl; she was found to take great delight in sewing and housework, and she no longer indulged in riding sticks and other boyish exercises." Thus from regarding the operation from only one point of view, a creature already accused by fate, is altogether deprived of those rights and privileges which by reason of the predominance of the male sex would have remained to him, such as right of suffrage, privilege of holding office, and the possibility of obtaining the higher wages from which females are excluded.

In offering some of the above suggestions I may have seemed to disregard the warning of the proverb about letting sleeping dogs lie, but daily occurrences proving that their sleep is of the lightest, I have remembered the greater wisdom of taking such precautionary measures as will render it impossible for the aforesaid dogs to bite should they awake.

THE NEED OF MEDICAL LEGISLATION.

There has lately been manifested, at the meetings of the Society of Medical Jurisprudence and State Medicine of New York, a laudable disposition to discuss in a practical manner such questions as arise from the ordinary, as well as the more unusual circumstances of daily life. I would recommend to this Section to give to such questions even greater and more critical consideration, as the discussion of such subjects in a common sense way, by these bodies, will surely do something towards stimulating the now tardy and indifferent legislator to take measures to, at least, attempt to mitigate some of the more glaring evils that now exist either because of defective legislation, or from the absence of any laws bearing on them. There is probably no lack which brings greater suffering to a larger number of people than the absence in many of our States, and the neglect of enforcement in others, of proper laws to regulate the practice of medicine. The cries of the victims of ignorance and unscrupulous greed which come not only from one State, but from almost the entire land, should appeal for the sympathy and aid of the law more powerfully than any individual possibly can.

I will do our distinguished legislators the justice to say I believe if they were brought face to face, as physicians are, with the fearful suffering, often followed by death, of the victims of quacks and charlatans, they would exhibit at least a modicum of the interest and energy which they display when a bill is proposed which is likely to interfere with any of their privileges or pleasures, such as chicken matching, or other pursuits or amusements of a like elevated or intellectual nature. In these declining years of the nineteenth century, when, if ever, the human mind might be supposed to be not far from its zenith; when invention has proceeded from triumph to triumph; when the telephone, electric telegraph and cable have over-

leaped space and made rapid communication possible, not only between the inhabitants of the same city or country, but so linked continent to continent that what occurs in one is, within a few hours, published in the newspapers of the world, one would imagine that the sceptre had been stricken from the hand of Superstition, her temples leveled in the dust, and her devotees converted to a purer and more wholesome faith. But not so. She is as rampant and powerful to-day as ever, her shrines are as numerous and her followers as blind. The mares of her Tam O'Shanter may not be in such imminent danger of losing their tails, but the Tams are as credulous as was their rollicking prototype who so narrowly escaped Nannie's supple fingers. The smoke of the fires that set her cauldrons boiling stifles the air of as many secret places as when the apparitions were called up to answer Macbeth's questions, or so many scaffolds in New England groaned with the burden of their innocent victims. A despot, she troubles but little about improvement in methods of ruling her subjects. The creaking is as audible, the mechanism of her machinery as rude, her miracles as palpable frauds as when she herself was fresh from chaos, but, like death, she gathers in the wise and the simple.

One would suppose her cabinet performances and materialized spirits would not deceive a child; but that some of the brightest minds of the age have succumbed beneath their influence let our lunatic asylums bear witness. Apparently, though, the assisting spirits are more accommodating now than formerly, for at one time they were wont to postpone their coming until the scent of the witches' savory stew was strong in the air. But it has not been mentioned that the spooks who so kindly decorated the canvas held over lawyer Marsh's willing head by the fat hands of Madame Diss Debar were offered even a smell of soup. It would seem that even the electric light cannot so illuminate the mind that there will remain no dark recesses in which false beliefs may lurk and breed. With many of these erroneous conceptions it were futile for either legislator or medical man to attempt to deal until they have taken such form as is likely to be productive of serious harm either to the persons in whom they exist, or to those around them. Of the many phases of superstition which have attained proportions that render them worthy of critical scrutiny, there is none so dangerous as that which makes its possessor the facile subject of conscienceless quacks and death-dealing frauds. I think it is only when attempting to grapple with a matter of this kind that we can ever even partly realize

"How small of all that human hearts endure,
The part which laws or kings can cause or cure."

Few persons dream of the extent to which quackery is practiced, or the hold it has upon many men and women who, one would imagine, were far above its influence. Only a few exceptionally atrocious cases are brought to the notice of the public, the obscurity of some of the sufferers, and the reluctance of others to acknowledge that they have ever resorted to such irregular sources, serving as safeguards for the charlatans who torture them. There is no need to pronounce on these creatures and their victims the

malediction Macbeth invoked upon the witches: "Infected be the air on which they ride, and damned all those who trust them." Those who trust them are already damned.

A case in point was brought to my notice some time ago. A man and his wife, whose intelligence on many subjects is above the average, are living in a snug and tasteful home not far from Baltimore. Several weeks ago the woman, who was several months advanced in pregnancy, miscarried. Neither midwife nor regular doctor was called to attend her, and the neighboring women who sought to relieve her suffering with hot applications and other simple means were not allowed to continue their efforts, as both she and her husband believed she was under the influence of a witch's spell, and that such remedies would only increase its malignant effects. Instead of these a so-called magnetic doctor, who professed to be wise in the wiles of witchcraft, was sent for. This distinguished gentleman, who, at the beginning of his medical career, united the profession of a huckster with the practice of quackery, and peddled paper pills and potatoes, witch's potions and charms, bananas and fish from the same wagon, came with the cheerful alacrity characteristic of his class, bringing with him three charms, at \$3 each, which he disposed, as to him seemed best, about her person. At each of his tri-weekly visits he would turn her over on her face, and sit for half an hour holding his stubby fingers two or three inches above her spinal column, explaining that he did not dare to touch her, as the flow of magnetism was so great it would probably throw her into convulsions. During one of his visits, upon her complaining of constipation and requesting some cathartic pills, he called for pen, ink and paper, wrote a few words on a narrow strip, rolled it into the shape of a pill, and made her swallow it, telling her it would have "the happiest, speediest and most gentle effect."

Not being properly attended at the time of the miscarriage, and the feeble contraction of the womb failing to expel the placenta, the woman lay fourteen weeks flat on her back, suffering the most excruciating pain, which was accompanied with a constant discharge of blood and mucus. The retention of a decomposing substance was evinced by the sickening stench which made it almost impossible to remain in the room with the patient, and the absorption of the septic material into the system was manifested by high fever and delirium. Complaining, during one of her lucid periods, of the weakening effect of the continued discharge of blood, the wretch told her he would bring her a prayer which she must repeat until the flow ceased. I doubt if there can be a more pitiable sight than this poor woman, almost at death's door from septicæmia, scarcely able to lift her burning hands to her brow, suffering such agony as might suffice to kill the strongest man, yet, with the tenacity of desperation, striving, even through the vagaries of delirium, to hold fast to that which she hopes will bring her surcease of pain, and with parched lips in almost inaudible whispers repeating again and again fragments of a supplication but little better than wildest gibberish. Yet this is a case in which even a moder-

ately skilful physician might have so assisted nature that in a few days the woman would have been restored to her usual health, whereas she is still confined to her bed with small prospect of recovery.

The above is a fair sample of the methods employed by this, either deluded imbecile or unscrupulous scoundrel, so successfully he has been able to give up the huckstering branch of his business and devote himself exclusively to the cultivation of his magnetism, and the sale of his charms and magic powders. There is no better illustration of the proverb, "Fools rush in where angels fear to tread," than can be found in the reckless use by quacks and mountebanks of powerful and dangerous drugs which even the most experienced of our profession handle with the greatest caution. A physician of good standing will, in using such remedies, be influenced not only by a conscientious regard for his patient, but by the effects which any mistake or lack of judgment may have upon his own reputation. But the uncensored charlatan, having nothing to lose, and everything to gain, uses the most deadly agents in a way that would appal the community, were it known. The country stands aghast at the devastation caused by some fearful epidemic; yet this is usually short in duration, and it is doubtful if the number of its victims equals the number annually slain by criminal incompetency, yet there is comparatively little effort made to stop the nefarious practice.

An octoroon who flourished some time ago in Baltimore was in the habit of openly boasting that she would take any drug, regardless of its nature, that she could obtain from any source, put it in a bottle and, after pow-wow-ing over it awhile in the presence of the credulous fools who visited her, would demand, and generally receive, from \$5 to \$20. Many of the itinerant quacks are the vilest scoundrels on the face of the earth. One of these villains, traveling from State to State, pitching his tent on vacant lots of cities, towns and villages, dressing in fantastic costume, having a band of music and Indian dances, doing anything to attract a crowd to which he could sell his vile nostrums, stopped at a small town in Maryland. While there he was consulted by some foolish girls in regard to some ailments peculiar to women. He insisted upon making an examination, after which he told them it would be impossible to cure them unless they would allow him to have sexual intercourse with them. This is a case in which every decent man would like to unite in himself the offices of jury, judge and executioner; yet this fit subject for the gallows sells his poisons, offers his atrocious insults, and goes on his way unmolested.

A school or college must be of good standing to be allowed to issue diplomas, but any ignoramus can hang out a sign and otherwise advertise as a doctor without having suitably prepared himself to perform the duties of one. In Baltimore an ignorant man, who had served a doctor in a menial capacity, and had had no opportunity to gain knowledge except such as could be acquired in sweeping the office, and emptying spittoons, after his employer's death hung out his shingle, and commenced the practice of medicine on his own account.

Another plea which should be urged is that such persons prevent patients from receiving the service of skilful practitioners. A man who had been injured by heavy lifting was attended by one of these incompetent persons. After the patient's death, which occurred on the third day after the date at which the injury was received, this individual very coolly stated that he did not, while visiting the man, know what was the matter with him, nor did he know what had caused his death. Under such circumstances a regular practitioner, obeying the precept that teaches "in the multitude of counselors there is safety," would have called other doctors in consultation, but ignorance is generally autocratic. There should be a statistician appointed by the State to investigate and report the history of the numerous wonderful cures and operations advertised not only by quacks, but also by physicians of good repute. If this were done, it would be found only too frequently that, while the fame of the performance was being blown abroad, the subject of it was resting under the sod. It is due the public that the per centum of survival, in such cases, should be given, as false statistics are calculated not only to deceive the laity, but also to mislead the profession.

Some months ago a most eulogistic report of the skill displayed by the operator, and the success that attended the performance of a rather uncommon operation upon an inmate of one of our hospitals, was published in most of the papers of the country, but the trifling fact that the woman operated on died in a few hours after was not mentioned. The class that cures the disease regardless of the effects of the method used, is quite too large.

A report was made to me of a case in which a Pennsylvania so-called specialist was to receive \$100 and his traveling expenses if he succeeded in eradicating a cancer in the breast of a Baltimore County woman. After her death, which ended three months of terrible torture caused by the application every few hours of powerful escharotics, he demanded and obtained the sum promised, on the ground that he had extirpated the cancer, though the process employed had probably caused the death of the patient, and he had expected that it would when he undertook the case, as experience had taught him that a diseased condition of various organs was generally produced by such eradication; but, being a specialist, he had nothing to do with that. He was only prevented from getting a photograph of the denuded ribs by reason of the light in the room not being sufficient to enable the photographer to do his work, and the woman was quite too ill to be moved to a lighter apartment. He expressed great regret at the failure, as he wished the picture to exhibit as confirmatory evidence of his skill and success.

STATE MEDICAL EXPERTS.

There should be competent men also appointed by the State, at adequate salary, to serve as medico-legal experts on occasions when the aid of such is necessary. I know this point has been urged before, but I think the urging should be continued until successful, as it is exceedingly unjust that any physician,

whether willing or not may, at any moment the law sees fit to specify, be required to go on the witness stand in the character of a medico-legal expert. In that place, unless he be well posted in forensic medicine, and possess the coolness and self-reliance required to repel the onslaught of the lawyers, his reputation for knowledge and skill may receive in twenty minutes injuries that cannot be repaired in a lifetime. There are no stitches, however skilfully set, which will so bring together the jagged edges of such wounds that no disfiguring cicatrix will remain, like the mark set on Cain, to be seen and known of all men. No Indian takes greater delight in the agony of his victim than the average lawyer takes in the suffering of the medical witness under the treacherous thrust of the cross-examination. He seems to avenge on him the bitterness of all the potions and the griping of all the pills that have gone down the legal throat from the birth of law to the time of the trial. As the red savage whirls his bloody tomahawk and threatens one part of his writhing victim, and then, with lightning speed, strikes where least expected, so increasing the torture of the certain blow by the uncertainty as to where it will be inflicted, so the legal gentleman flashes before the strained senses of the medical witness, fettered by the law which, forbidding retaliation, leaves him at the mercy of his persecutor, the keen-edged weapon of the law, and the blow falls always where least expected. A contest of this kind, if contest it can be called, where the advantages of freedom and special training are mostly on one side, is as unfair as would be an encounter between the trained pugilist and a man not only ignorant of fistic science, but also handcuffed and gagged. The arena of pugilism is not the only place where freedom and nice training will do more for one than brains alone. The service demanded by the court and for which, in many States, no adequate compensation is allowed, frequently requires an amount of investigation and a consumption of time the physician can ill afford to give. A case of this kind came under my notice a few days before I began this paper. A young medical friend of mine, after having rendered three months of conscientious, gratuitous attendance to a patient who was supposed to be suffering from the effects of a blow, and a kick, learned that he would have to go into court as medical witness. Thus, at the time when he had reason to suppose that his work of charity, at least as far as that patient was concerned, was ended, he is obliged to begin a tedious investigation of the physical and pathological conditions and habits of life of the man prior to the assault. He must patiently inquire into many apparently trivial matters which, nevertheless, may prove to be of the utmost importance in elucidating the history of the case. This information must be obtained from the patient, his relatives, or friends, who will naturally endeavor to conceal whatever may be prejudicial to the patient or favorable to the assailant. Yet, when brought into court, the doctor will be expected to be able to state with the utmost exactness how much of the man's suffering was the result of the injuries received, of his habits of life, or of the pathological conditions which, according to the lawyers,

may, might, could, would or should have existed prior to the assault. If my friend fare on the witness stand as many of his medical brothers have fared before him, he will not be there long before he will find, though ostensibly called there to state simple facts relating to the case, the law will strive to utilize him as an expert, and the time which should be spent by him in assisting in elucidating the truth, will have to be expended in defending his own reputation for knowledge and skill against the imputations of the lawyers.

WHEN ARE DYING DECLARATIONS ADMISSIBLE?

To be admissible, "dying declarations must be made in extremity, when the party is at the point of death, and every hope of this world is gone." In consideration of the fact that the mental and physical conditions of the person at the "point of death" are usually such as to render the reliability of his statement extremely doubtful, no matter how conscientious he may be, there is no time when justice more imperatively demands the presence and aid of an intelligent, experienced physician, than when the law is endeavoring to fasten the crime of homicide upon a prisoner through the identification and dying declaration of the victim of deadly assault, or of foul play. As in many instances the fate of the prisoner rests mainly upon such evidence, no means should be left untried which will assist in determining its credibility. The nature of many agents used to destroy life, and of injuries which result fatally, can be alleged as sufficient reason why, when it is necessary to bring the accused into the presence of the injured person to be identified, the State should, if possible, have a physician present whose duty should be to make a careful examination of the declarant's mental, visual and other conditions. For, at the time the declarant may be trying to identify the prisoner, his intellect and vision may be so disturbed by cerebral anemia resulting from the loss of blood as to lead to the gravest mistakes. Also because the insidious intellectual changes which are sometimes the sequence of cranial injury may convert the best friends into the bitterest foes, and yet be undetected by inexperienced persons, though they would be suspected by the doctor from the nature of the injury.

Another fact likely to be unknown to a large majority of the laity is that, in anemia resulting from loss of blood, the upright or semi-recumbent position may render the declarant less capable of making a trustworthy statement, whereas the horizontal position, by encouraging the flow of blood to the brain, would increase mental activity and thus tend to promote the ends of justice.

The effects of the kind and quantity of stimulants given so freely at such times should also be noticed, as these not only vary greatly in different persons, but vary greatly at the different periods at which they are administered to the same person.

Where a woman is dying of septicæmia consequent upon criminal abortion, there may be light delirium, or such form as occurs at intervals, which might slightly confuse the memory and distort the imagination, yet not be discovered by persons unfamiliar

with the concomitant symptoms and pathological conditions present.

PREVENTION OF CRIME.

How to prevent crime has been a momentous problem in the past and is still one. The higher education of the masses is generally urged as the best solution that can be offered. When this higher education no longer means, as it mainly does at present, the teaching in a superficial manner by our educational institutions of many comparatively useless branches and so-called accomplishments, but such special instruction and training as will qualify our boys and girls to grapple successfully with, at least, a few of the numerous practical questions which will inevitably confront them, then it can be presented as a potent agent towards the promotion of the desired end. "Ignorance," it is said, "is the parent of crime," but the doctrine of heredity does not exempt the offspring from punishment. In many instances, arraignment and conviction are the first intimations persons have that the deeds committed are crimes.

The limited publication of the laws enacted by our legislatures and the meagre facilities afforded a large majority of our people to acquire knowledge of many offenses at common law are fruitful sources of crime and suffering, as well as of great expense to the State. If the teaching of Medical Jurisprudence were rendered imperative in our schools it would do much to prevent crime, since our youths, both male and female, would not only be taught the nature and enormity of various crimes, and how easily from want of this knowledge persons may innocently become accessory thereto either before or after the fact, but its doctrines would be carried home by them, and thus kept fresh in the minds of the people. If the introduction of Medical Jurisprudence in our schools did no more than teach our girls the sanctity of their relation to, how best to promote the welfare of the life which they may bear within them, and the magnitude of the crime of attempting at any period, by any means, to compass its destruction, also the terrible and lasting, if not fatal effects on the mother of any effort to destroy the fetus; it is impossible to estimate the good that would be accomplished or the evil that would be prevented.

There is probably no crime more common than fœticide, and none that is so frequently the result of ignorance. Few of the many women that resort to it either to hide their shame, or because they are unwilling to endure the trouble and care of children, have any idea of the heinousness of the deed, of its effects on themselves, or the extent to which it would make them amenable to the law. The ancient doctrine that up to the tenth day it is merely an *effluxio* is still largely believed, and because of the prevalence of that opinion abortion produced within that period is not regarded by the masses in the serious manner it would be if its nature were better known. There are many men and women, even among the higher classes, and living in cities, where it is reasonable to suppose the opportunities afforded for the acquirement of such knowledge are much greater than in sparsely inhabited places, who are totally ignorant

that the destruction of the fetus during the earlier stages of gestation is a crime even in a moral sense, much less one of sufficient turpitude to render them liable to criminal prosecution.

Another advantage which should not be lost sight of, is that in teaching Medical Jurisprudence in our schools we will be instructing our future legislators in that branch of science and thereby preparing them better to understand the needs of the people, and to frame laws to meet them. If a knowledge of forensic medicine were generally diffused among the laity we would have laws to take cognizance of offenses against the mind which are liable to produce insanity and develop some of its worst types, known as homicidal and suicidal mania. The law prohibits the infliction of corporal injuries and frequently punishes the inflictor, but against assaults upon the mind it at present affords but little protection, yet bodily injuries do not more frequently disable the assailed, unfit him for the performance of his daily duties, and render him incapable of self-preservation than do wounds of the mind. Great mental irritation or distress produced by continued complaining, malicious tantalizing, persistent nagging, ceaseless importunities for things not in the power of the importuned to grant, or causeless accusations of immorality may lead to permanent impairment of mind and body. Men and women have been driven to moral and financial ruin, to lunatic asylums, and to their graves, by the repining over the unpreventable, and whining for the unattainable of persons from whom the exigencies of life rendered escape impossible.

The virtues of the persecuted have in some instances thrown up barriers which their distress could not overleap. A man was observed sitting evening after evening in a saloon. Some surprise was expressed at this as he neither drank nor sought the company of the other frequenters of the place, but sat by himself and seemed dazed and stupid. Upon inquiry it was learned that he was a sober, industrious mechanic who had been driven to this state of melancholia by a querulous wife. This is only one of numerous cases, the history of which would illustrate the need which exists of laws to protect against such attacks. When such assaults are made by the husband upon the mind of the wife, or by the wife upon the mind of the husband, the interposition of the law is especially necessary, since when married it is more difficult for the persecuted person to escape. In almost every contract except that of marriage the law protects the parties thereto from such breach or non-observance of the terms as may be likely to evilly affect individual or joint interest or lead to impairment of the contract. Then why should not the law afford a similar security to the parties to a contract of marriage, and enable either husband or wife to secure the interposition of the court, by ir junction, or otherwise, to prevent the continuance or repetition of such acts as are likely to injure one party or both, or lead to dissolution of the marriage itself?

This query, with the preceding proposition, I now submit for your consideration.

THE APPENDIX VERMIFORMIS, ITS FUNCTION, PATHOLOGY AND TREATMENT.

Read in the Section on Surgery at the Thirty-Ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY HENRY H. SMITH, M.D., LL.D.,
OF PHILADELPHIA, PA.

In writing of "Intestinal Obstructions," Mr. Treves states,¹ that "their importance may, in one way, be estimated by the circumstance that over 2,000 individuals die every year in Great Britain from obstructions of the bowels, exclusive of hernia." Dr. Senn, of Milwaukee, also considers them of such consequence, that during the last eighteen months (January 1888) he has reported² "one hundred and fifty operations performed on animals, for the purpose of studying the effects of the principal varieties of intestinal obstructions produced artificially." Treves does not state what proportion of the deaths he speaks of, were due to disorders of the appendix, and Dr. Senn's experiments have not yet been extended to this tube. It is, however, widely known, that the appendix is sometimes a cause of constriction of the ileum, and that stenosis of its cæcal orifice, from inflammation of its coats, or concretions or foreign bodies in its canal, frequently induces local and general peritonitis, peri-cæcal abscess or perityphlitis. Whether the starting point of the latter is in the appendix or the cæcum, is a question yet *sub judice*; but there is much evidence daily accumulating to show that it is the appendix. In the United States, Dr. J. H. Musser, of Philadelphia, states,³ "that appendicitis is in the origin of peri-cæcal abscess, perityphlitis, and peritonitis in about 90 per cent., or perhaps a larger proportion, of such cases," and it is now, I think, generally admitted by surgeons, that perforations of the cæcum are rare as compared with those of the appendix.

In the *Index Medicus*,⁴ are references by 248 authors to disorders of the appendix, as the result of the appendicitis. Of these cases, ninety four only are reported as due to the presence of foreign bodies. Some of these authors detail several cases: Lewis, of New York, furnishing forty cases of foreign bodies alone. As seventy-six of these authors were physicians of the United States, the results of appendicitis have been widely recognized, though not so assigned by them. Concretions and supposed foreign bodies, were found in about 30 per cent. of these cases.

Although so well and widely known, Lieberkühn having written "*De calcula cæci et usu processus Vermicularis*" in 1730, and Herlin "*De l'usage de l'Appendice Vermiformis*," in 1718, this organ has not been as minutely studied in its relations to the

¹ Intestinal Obstructions, its varieties, with their Pathology and Treatment, by Frederick Treves, F.R.C.S., London, Phila Edition, Preface, 1884.

² An Experimental Contribution to Intestinal Surgery, with special reference to the Treatment of Intestinal Obstructions. By Nicholas Senn, M.D., Milwaukee, Wis.

³ The Morbid Anatomy of Peri-cæcal Inflammation, by J. H. Musser, M.D., Phila., Journal American Medical Association, page 71, Jan. 21, 1888.

⁴ The Diagnosis of Peri-cæcal Inflammation, by Wm. Pepper, M.D., LL.D., Phila., Journal American Medical Association, page 72, Jan. 21, 1888.

alimentary canal and the process of digestion, as the fatal character of its disorders demands, and though all present, doubtless recall the general anatomical relations of the appendix, perhaps its special structure and its probable function are not so well understood. Indeed, there is reason to think that many practitioners hold the opinion of a recent writer and teacher who states, "we have this little organ (appendix) singularly useless physiologically, placed in a singularly unfavorable position anatomically, and so formed that escape of its contents is very difficult, whilst it is very prone to become diseased."

A few words on the special anatomy of the appendix may suffice to bring the subject of appendicitis and its results, to the notice of this Section, and elicit such discussions as will tend to show the surgical opinions on the subject, and aid in the scientific treatment of a serious pathological condition that is daily creating increased interest: Pericæcal abscess and perityphilitis being often only symptoms of a pre-existing disordered action in the appendix.

SPECIAL ANATOMY OF THE APPENDIX.

The appendix cæci, or vermiformis, in man, varies in length from six or eight to ten centimetres; or from two to six or nine inches,^a the cæcum being only one and one-half to two inches long, and widely expanded. The calibre of the appendix, is in breadth internally, about the size of a goose-quill. It is *not* a straight tube, but is generally slightly flexed or curved on itself, and varies in its normal position and direction, being sometimes adherent to the left and posterior face of the cæcum and extending upwards nearly to the gall-bladder, or under surface of the liver.

Its blind extremity points nearly always towards the spleen, though it may dip down into the pelvis and become adherent to the right broad ligament of the uterus or to the right ovary, these variations of position being due to the length of the fold of its peritoneal attachment to the mesentery. Sometimes its free end becomes adherent to some other organ, and is twisted as a loop around the small intestine as a constricting band, causing obstruction or strangulation of the involved bowel. At its base, the appendix opens obliquely into the posterior and inner side—but not the lowest point of the cæcum—just below and on the same side as the ileo-colic valve, whilst its summit or blind end, is rounded and firmly closed. On slitting open the canal of the appendix, we may note the comparative thickness of its walls, and that its mucous coat and sub-mucous tissue, is well developed, and by a semi-lunar fold that partly conceals the caecal orifice, forms a sort of valve or ridge, that opposes the passage of solids from the cæcum to the appendix, feces, etc., being forced into the appendix mainly by straining or by vomiting.

Speaking of this valve of the appendix Henle says "that as a rule, this duplicature of the mucous membrane is sometimes only a small border or pro-

jection, but at other times it occupies half or more of the calibre of the opening, and interferes with a free communication between the cæcum and the appendix in either direction. Sometimes opposite to this valve and deeper in the appendix, there is a second valve-like projection." Gerlach states: "that in elderly people, these valves of the appendix are atrophied or shrunken, and this is the reason why perforation from the pressure of concretions (Kothsteines or excrement stones) is unknown," and this confirms the opinion that perityphilitis is comparatively rare after 40 years of age. Bauer says,^b "Typhlitis is most common between 16 and 35." Appendicitis is mostly met with before the 45th year, though sometimes, as in a recent case in New York, the patient was 58 years of age and had sloughing of the appendix, from a concretion, abscess and general peritonitis.

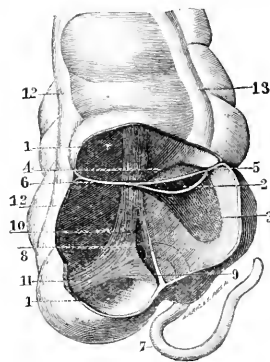


FIG. 1.—Circular Section of the anterior and external portion of the cæcum, showing the appendix vermiformis and the ileo-cæcal valve.

1. Distended dried cæcum at its lowest point and below the opening of the appendix and ileo-cæcal valve.
2. Orifice of the ileo-cæcal valve.
3. Its inferior duplicature.
4. Its superior fold, as seen on the front.
5. The anterior and internal edge or bridle of the valve.
6. Its longer and posterior bridle.
7. The appendix vermiformis as often found, curved and pointing to the spleen.
8. Its round or trumpet-shaped mouth.
9. The semilunar fold of its mucous coat, which partly closes the orifice of the valve of the appendix. The course of the appendix towards the opening in the cæcum is indicated by dotted lines.
10. The longitudinal muscle or fibres of the posterior external band of the colon, which are continued under the valve and constitute the longitudinal fibres of the muscular coat of the appendix, and cause its curved shape when contracted. These fibres force the contents of the appendix into the cæcum.
11. The anterior longitudinal band of the colon.
12. Its prolongation on the ascending colon.
13. The posterior longitudinal band of the colon. It will be noticed that there is a pouch of the cæcum below the level of the orifice of the appendix, so that nothing can drop into the appendix.

^a Copied from Prof. Saupé's *Anatomy*, Paris, 1874.

The coats of the appendix are the same as those of the other intestines, but its walls are often much thicker, and vary in thickness according to the contraction or diminution of the length of the tube. In its muscular coat, the longitudinal fibres predominate over the circular ones, and are apparently a continuation of some of the fibres of one of the longitudinal bands of the colon. The action of these longitudinal

^a Reported nine inches by Dr. T. G. Morton, Philadelphia.

^b *Handbuch der Systematischen Anatomie des Menschen*. Von Dr. J. Henle, page 178. Eingeweidelehre, 1862.

^c Gerlach: *Abhandl. der Erlangen Physikal. Medicin. Societät*, 11, 7.

^d Ziemssen's *Cyclopedia of Med.* Vol. viii.

fibres of the muscular coat of the appendix, diminishes its length and gives it a curved or vermiform action, thus forcing its contents into the cæcum whilst relaxing and opening the cæcal orifice, and favoring the escape of its secretion. (Dried Specimens) and (Fig. 1.) The power of the longitudinal fibres of the colon thus alluded to is marked, as has been shown in the horse at the veterinary school of Alfort, where bullets, marbles, and other foreign bodies swallowed by the animal, were quickly elevated in the ascending colon by muscular contraction. In a case of artificial anus in the Pennsylvania Hospital, Philadelphia, reported by Dr. Hunt, the vermiform movement of a portion of the posterior band of the colon which is continued into the appendix, was so strong, that a finger introduced into the opening was firmly grasped by the muscular coat, and small articles were drawn up the ascending colon with a great degree of force.

"The follicles of Lieberkühn" or the tubal glands, are numerous, and found in the mucous coat of the appendix. The "agminated glands of Peyer" are also well developed near the summit of the tube. It is not settled that a gland or two of "Brunner" is not also present. In the Herbivora and omnivorous animals, these glands of Peyer are more developed than in the Carnivora. Prof. Colin of Alfort, regards them as secretory organs, and of enormous dimensions in the Rodents. He says: "A gland of Peyer of the length of a finger of a glove, lines their appendix throughout its entire length. Sometimes he also found the appendix free from food and entirely full of a beautiful greyish opaque or transparent liquid, analogous to a solution of gum, and this liquid was not found in other portions of the small intestines, but was sometimes found in the colon when the solitary follicles were very closely developed. This fluid is similar to the mucous found in the appendix of man. When stenosis of the canal of the appendix occurs, and the escape of its secretion is prevented, the appendix may become distended to the size of the fore-finger or larger, creating a "Mucocele" a case of which is reported by Feré. In the new born infant the canal of the appendix is relatively larger than in the adult, and often contains Meconium whilst in the adult, small hard particles of solid feces resembling the dung of mice, or like raspberry seeds, may become the nucleus of concretions that frequently are mistaken for foreign bodies that have been swallowed. In the post-mortem examinations of bodies, accidentally in the dead house of the Pennsylvania Hospital, concretions were found in each as shown in the specimens.*

FUNCTION OF THE APPENDIX.—Whilst the structure of the appendix has thus been studied, its Function yet remains in doubt. Indeed, several writers regard the function of this organ as of but little importance, an appendix vermiformis being present only in six varieties of animals. Dr. Chapman, of Philadelphia, says: (a) "That a true ap-

pendix vermiformis is only found in Man, the Gorilla (b), Gibbon (c), the Chimpanzee, the Orang (d), Wombat (e), and Capybara (f), and that in many of the mammalia, the cæcum (which corresponds to the cæcum and appendix together in man) is large and often very long; that in the mammalia generally, the size of the cæcum is in an inverse ratio to that of the stomach. In the Capybara or Water-Pig, whilst its cæcum measures twenty-six inches its stomach measures ten inches; whereas, in man, whilst the stomach measures laterally from thirteen to fifteen inches, his cæcum is only from one and one-half to two inches, and his appendix vermiformis measures from three to six inches. Chapman, therefore, regards the appendix in man as having no particular significance or utility."

Morgani, Jno. Hunter, Meckel, Haller, and others, also report authentic cases in men, where the appendix was wanting, and hence, they ascribe little value to its function. Nevertheless, as it exists in connection with the alimentary canal, and as its disordered action disturbs digestion to a degree that often results in death, it may influence our treatment of its diseased condition, to recognize, if only on imperfect proof, its healthy connection with the process of digestion as seen in animals as well as man.

In studying digestion in man, we note that as the chyle passes from the ileum through the ileo-colic valve, it rests or settles into the lowest portion of the cæcum as a liquid substance, on which the secretion of the appendix is poured out. As the liquid elements of the chyle are rapidly absorbed, a thickened mass is seen to form and undergo chemical changes, being transformed from an acid to an alkaline substance with the evolution of hydrogen, nitrogen and other gasses that create a marked fecal odor, not ordinarily so marked in the small intestines. The absorbent action of the cæcum is accomplished through its mucous coat, which is furnished with numerous follicles or "cryptæ minime," of Meckel. The great uniformity of these follicles in the colon, Horner states, "enable us to count them with certainty thro' the microscope. In the cæcum, they are found at the rate of about 400 for every one-eighth of an inch square, and admitting the entire area of

* Gorilla. Eats fruits, seeds and the young shoots of plants.

c Gibbon. Anthropomorphous Monkey is omnivorous, but prefers fruits and roots.

d Orang. Eats meats, but prefers fruit.

e Wombat. Feeds on roots and vegetables.

f Capybara. Feeds on grasses.

NOTE.—Some notes on the vermiform appendix. Received April 30, 1888, from Dr. Henry F. Formad, Demonstrator of Morbid Anatomy in the University of Pennsylvania, and as Coroner's physician, largely occupied on post-mortem examination.

DR. HENRY F. SMITH, Philadelphia.

Dear Doctor.—From my notes upon cases and studies upon the post-mortem table, I found that you are perfectly correct in your observation that the vermiform appendix is proportionally much larger in infancy than in adult life. Microscopic examination also confirms your observations on the vermiform appendix, with all the glandular elements peculiar to the small intestine, save the Brunner's glands, and that it evidently contributes to the functions of digestion. I have very frequently seen typhoid and tubercular ulcerations, and catarrhal discharges, in the vermiform appendix, as a part of a general disease of the mucous membranes of the large or small intestines. The average length, is from three to seven inches—the length being greater in the colored race, and relatively greater in the Germans and Irish than in other nationalities. Fecal matter and concretions are exceedingly common in the vermiform appendix, surely much more common than is generally held.

Yours respectfully, HENRY F. FORMAD
Special Anatomy, by Wm. E. Horner, M.D., Philadelphia. Vol. II, page 57.

* Reports of the Pennsylvania Hospital, Vol. I, page 164, Philadelphia, 1868.

Colin, Physiologie Comparée des Animaux Paris, 1856, page 11.

Progres Médical, Paris, 1877, page 53.
(a) Transactions Philadelphia Coll. of Physicians, Vol. 3, 3rd Ser. Page 192, 1857.

the colon to be 500 inches, and that 19,200 of these follicles exist in every square inch, we have the extraordinary number of 9,620,000 muciparous crypts or absorbing points, in connection with the underlying veins and arteries of the large intestines. That the cæcum alone creates marked changes in the chyle by the absorption of its liquid elements through the blood-vessels and crypts just alluded to, is well known. It is not therefore surprising that this very vascular structure of the cæcum should soon participate inflammatory changes induced by disordered action of the appendix which open into it."

That the appendix exercises some influence on the action of the cæcum in digestion is quite probable, as its mucous coat differs very materially from that of the cæcum and colon in the arrangement of its capillaries and mucous crypts, as shown¹³ by the minute injections of Neill, of Philadelphia, in 1851; whilst Gerlach states:¹⁴ "that the intervening spaces between the crypts of the appendix are so prominent, as to make them look like small bridges" a marked anatomical difference. With this vascular structure, we may well suppose that the secretion of the appendix is free, and differs in some way from that of the cæcum. Perhaps it is the source of a lacto-peptone mixed with a large amount of mucus and some phosphates or carbonates of lime, that in some way modifies the formation of the feces, and by its mucus secretion facilitates their passage up the ascending colon; hence, an early symptom of appendicitis is constipation. The presence of an appendix vermiformis in certain herbivorous animals and its absence in the carnivora, would also seem to indicate that this organ has some influence on the digestion of vegetable matter. Tiedman and Gmellin, long since observed that the gastric juice of the herbivora, possessed this power, whilst that of the carnivora, (that have no appendix) was not sufficiently active to digest coarse vegetables, cereals or hay or straw.

The term "gastric juice" thus employed by them, is not limited to the secretion of the glands of the stomach, but includes the secretion of the liver, pancreas, and intestinal juices. In the Carnivora that have no appendix, the pancreas is said¹⁵ to be comparatively small, and though participating in digestion, it is well known that both they and the appendix vermiformis can be excised without materially impeding digestion; thus Brunner¹⁶ in 1673, removed the pancreas from eight dogs that continued to live varying periods; their faces remaining normal; and Prof. Colin,¹⁷ of Alfort, in 1857, removed portions of the pancreas in six dogs, the animals subsequently preserving their health and spirits and increasing in flesh.

Whatever may be the part played by the appendix vermiformis in connection with digestion (and its function certainly requires further investigation), it

is evident that we have in it a mucous coat liable to catarrhal inflammation, under which changes are created that lead to stenosis of the tube, to the accumulation of its secretion, to distention, ulceration, and perforation of its coats, and to peritonitis, that is soon followed by pus, and abscess in the right iliac region, especially in the loose connective tissue around the cæcum, a symptom often spoken of as perityphlitis. This catarrhal inflammation or appendicitis, resembles in its results duodenitis with obstruction of the ductus communis choledicus, or of the ductus ad nasum with obstruction of the course of the tears from the saccus lachrymalis.

As surgeons, we are not then justified in supposing that the function of the appendix is to aid digestion and the onward course of the feces from the cæcum, and consequently, must we not in the early stages of appendicitis, carry out the same treatment as would be proper in any catarrh of a mucous membrane? In other words, should we not strive to overcome the early constipation and restoration of the natural secretions of the bowels by emptying the cæcum, and favoring increased peristaltic action? Or, when this fails, promptly overcome the obstruction by an operation?

PATHOLOGICAL CHANGES IN THE APPENDIX VERMIFORMIS.

The varying position of the appendix has been noted by Treves, of London, Fitz, of Boston, Formad, of Philadelphia, and several others. Its most usual position is behind the ileum and its mesentery with the tip pointing to the left, or behind it on the inner or left side of the cæcum, pointing directly upwards and often adherent to the colon. It may be found in a right inguinal hernia.¹⁸ It may vary in size as well as position, being sometimes small and atrophied, or dilated to the size of a finger or of the ileum,¹⁹ distention being more common than atrophy. It usually contains mucus or specks of hardened feces, but not unfrequently presents concretions or calculi that are adherent to and distend the tube. These calculi or supposed foreign bodies that are swallowed, according to an analysis recently made at my request,²⁰ were composed of calcium and phosphoric acid ($\text{Ca}_2(\text{PO}_4)_2 = \text{Ca}_2\text{H}_2(\text{PO}_4)_2 = \text{CaH}(\text{PO}_4)_2$), and did not contain any cholesterol. Another small specimen, (b) weighing only 80 milligrams, left about 6 per cent. of ash, consisting of calcium phosphate with a small amount of carbonate of lime. Its structure was laminated. The examination of a second and larger specimen by Dr. Leffman gave the same results, phosphate of lime and no cholesterol. Inspecting a section under the microscope, I found a conglomerate structure of yellowish-brown atoms, united by apparently condensed mucus. Another specimen, at first supposed to be a cherry stone, was examined microscopically by Dr. Guy Hinsdale, of Philadelphia, and proved to be only impacted feces.

¹³ On the Structure of the Mucous Membrane of the Appendix Vermiformis, Cæcum and Colon, by John Neill, of Philadelphia, Medical Examiner. Vol. vii, N. S., page 85, 1851.

¹⁴ Gerlach. Abhandler der Kriegen.

¹⁵ Dictionnaire de Médecine. Tome x. Paris, 1835, page 348.

¹⁶ Physiologie Comparée des Animaux. Par Colin d'Alfort. Prof. Ecole Vétérinaire. Paris, 1866, page 382.

¹⁷ Opus Citat.

¹⁸ Pathological Society. London, vol. xxv, 1874.

¹⁹ Dr. T. G. Morton has reported by Deputy Surg.-Gen. Marston.

²⁰ MS. of Dr. Guy Hinsdale, Curator, of an analyses of a concretion from the Mutter Museum, made by Dr. Henry W. Cattell, Assistant Demonstrator of Chemistry, University of Pennsylvania. The nucleus was hardened feces.

(b) Analyzed by Prof. Henry Leffman, M.D., of Pennsylvania Polytechnic.

It gave a reaction for magnesium, which the others did not.

Blood, feces, seeds and substances swallowed, as shot and pins, and entozoa or lumbricoides are also occasionally met with in the appendix, which, inducing inflammation, lead to various disordered conditions. Thus, Ashby²¹ reports a pyæmic abscess of the liver as secondary to ulceration of the appendix resulting from the impaction of a pin.

Joffroy²² reports the perforation of the appendix by a pin, symptoms of typhoid fever, peritonitis and death.

Audouard,²³ a perforation of the appendix, perinephritic abscess of the right side and consecutive empyema after perforation of the diaphragm by the pus.

Becquerel²⁴ mentions the issue of lumbricoides into the cavity of the peritoneum through a perforation of the appendix.

Mestivier²⁵ speaks of a tumor near the right side of the umbilicus occasioned by a large pin found in the appendix.

William Pearson, Jr.,²⁶ reports ulceration of the appendix; portal phlebitis and multiple abscesses of the liver.

Freeman,²⁷ an abscess of the appendix followed by phlebitis of the left leg.

Bontecou²⁸ relates three cases of abscess and pelvic peritonitis from perforation of the appendix.

Claiborne,²⁹ an abscess of the appendix opening externally.

Thornton,³⁰ ulceration of the appendix and fatal peritonitis, produced by an orange seed (?) or what was supposed to be such.

Mason reports perityphlitis with perforation of the appendix; rupture of the wall of the abscess, causing general peritonitis and death seventy-four days after the abscess had been freely opened. These are but a few of the well recorded cases of the results of appendicitis.

For these and previous references I am indebted to the *Index Medicus*.

The glands of Peyer in the appendix may become the seat of tuberculous deposit, softening, ulceration and perforation, as is sometimes seen in phthisis pulmonalis, or there may be a perforation of the appendix from softening and ulceration of Peyer's glands in typhoid fever. Great changes in the walls of the appendix sometimes result from appendicitis. When ulceration supervenes, the walls and the canal may become contracted and indurated, the appendix being so shortened as to be only 1 or 2 inches long, giving the operator the impression of its being a gland or neoplasm; but a careful examination with a probe will usually detect the canal of the appendix.

The stenosis of the canal of the appendix, leading

to a retention of its secretion, not infrequently results in the formation of a calculus, as before stated, the nucleus of which may be a speck of hardened feces around which the mucus collects, receiving in addition a deposit of phosphate or carbonate of lime. As the liquid is absorbed, the layers of the calculus become denser and it is moulded to the shape of the canal, impacted, and often firmly held in place. Sometimes several calculi, from the size of a raspberry seed to that of a date or olive stone, for which they may be readily mistaken, are also seen.

Whilst writing this, I received from Deputy Surgeon-General Marston, of London, his report to the British War Office of the meeting of the Ninth International Medical Congress. In this I find his opinion corresponds with my own. Writing of appendicitis and ulceration he says:³¹ "These are often described in the text-books as due to the introduction of foreign bodies into the canal, but in my experience, while such may be present, they are not always so. Apart from tuberculous affections of the glandular structures of this part of the bowels, all the cases I have seen have been of a similar character. The canal contains a substance in shape and form like a date stone, fairly dense, but capable of being cut or indented by the finger-nail; of a brownish or yellowish brown color, formed apparently as follows: An insignificant fragment of fecal matter finds its way into the canal of the appendix vermiformis; catarrhal inflammation follows, with a fluid secretion holding phosphate in solution as a product of the inflammation. The fluid being absorbed, the phosphate forms a soft concretion, which becomes moulded to the shape of the appendix and in turn sets up inflammation, ulceration or sloughing of the coats of that part of the intestine."

SYMPTOMS OF APPENDICITIS.

The symptoms of appendicitis are, in the commencement, such as indicate disorder of digestion, the disease appearing sometimes without premonitory symptoms and resembling a certain type of colic, with vomiting and griping pains, that at intervals attain great severity and double the patient up, to relax the abdominal muscles. Sometimes the right thigh is flexed on the pelvis to relax the iliacus internus and psoas muscles. The pain may be preceded or followed by vomiting, first bilious and subsequently stercoraceous. Often there is pain towards the navel and a sense of constriction of the belly as in hernia, with continued constipation, or one or two movements of the bowels and then constipation. These symptoms, under the ordinary treatment of colic, may pass off and not return for several weeks; but after an uncertain period of weeks or months, the griping and vomiting return with more violence, though sometimes the attack is violent from the commencement, with evidence of disorder in the right iliac or lumbar region, the patient ignoring previous attacks and misleading his physician, unless closely questioned. When the symptoms are severe and last for twenty-four or forty-eight hours, with tender-

²¹ London Lancet, vol. ii, 619, 1870.

²² Bulletin Société d'Anatomie, 44, p. 512, 1869.

²³ Progrès Médical, vol. iv, p. 416, 1876.

²⁴ Bulletin Société d'Anatomie, vol. xvi, p. 172, Paris, 1841-42.

²⁵ Journal de Médecine et Chirurgie et Pharmacie, vol. x, p. 441, Paris, 1750.

²⁶ Transactions of the Medical Society of New Jersey, 1874, p. 273, 1881, Newark, N. J.

²⁷ Canada Lancet, vol. iv, p. 268, Toronto, Can.

²⁸ Trans. Med. Soc. of New York, vol. lxviii, pp. 137-139, Albany, 1873.

²⁹ Claiborne, American Weekly, Louisville, vol. 1, p. 53.

³⁰ American Medical Weekly, Louisville, 1874, vol. 1, p. 305.

³¹ Report on the Ninth International Medical Congress, by Deputy Surgeon-General Marston, representing the War Department, London, p. 42.

ness and evidence of local peritonitis, fever is apt to follow; the pulse counting 90 or more and the temperature reaching 102° or more, with indication of localized pain. Free urination also is often a marked symptom. The belly sometimes becomes tympanitic and percussion may indicate a degree of flatness in the right side or towards the umbilicus; but flatness is not always noted, owing to gas in the colon. Sometimes, under the relaxation of ether, it is possible to recognize by palpation a spot that is doughy or more resisting than natural. Sometimes it is more prominent than usual, and sometimes it is possible by relaxing the abdominal walls to circumscribe a swelling or tumor that is sensitive to the touch and corresponds with the position of the cæcum, but often there is only a thickening of tissue and no defined tumor. As gas cannot escape from the bowels, tympanitis becomes more marked, fever increases, with pain, and symptoms suggestive of perforation of the bowels and acute peritonitis appear; but frequently we note only a slight acceleration of the pulse during the colicky pain and are liable to be misled by the temporary relief of pain and the absence of swelling or fluctuation.

DIAGNOSIS OF APPENDICITIS.

One of the marked difficulties met with in the treatment of appendicitis is a correct diagnosis, and this difficulty is so great that Mr. John Hunter²² said it never could be satisfactorily made during life. This difficulty is often increased by the fact that the case is sometimes under the care of the family physician who only calls for the surgeon's assistance at the last moment. When seen early appendicitis may be suspected from previous history, especially a continued tendency to constipation and the repetition at varying intervals of colic or vomiting. When a suspicion exists of the presence of obstruction in the appendix a correct diagnosis can only be arrived at by exclusion. Thus, are the symptoms presented due to hernia, to volvulus, an intussusception, a tumor of the mesentery, or other organs. Comparison of the symptoms of each of these with the history of the case will greatly aid the diagnosis. Then, the patient being etherized, let careful palpation be practiced of the right iliac, hypogastric and even lumbar regions. Sometimes a cæcum can be recognized as impacted, sometimes a doughy or imperfectly indurated structure can be felt in the right iliac or lumbar region; at other times there will be severe acute pains in these regions. When any of these symptoms are recognized, when the pulse and temperature permanently rises and there are the symptoms of peritonitis, the diagnosis may be regarded as sufficiently correct to justify surgical interference. If laparotomy is performed and the diagnosis of pus, perforation, or thickening of the appendix is not found, the result will be often more favorable than the subsequent changes induced by appendicitis left to nature. The use of an exploring needle is liable to serious objections and dangers and is not a useful addition to our means of diagnosis.

PROGNOSIS.

The prognosis of appendicitis is always grave, and the result uncertain, the patient's condition resembling that of one with a reducible hernia, liable at any moment to be strangulated. Sometimes under early and appropriate treatment the symptoms of appendicitis disappear, the disease terminating apparently in resolution and in the restoration of the peristaltic action of the cæcum; but in other instances, where there is hesitation in diagnosis and delay in treatment, the disease running on to a perityphlitic abscess, perforation of the appendix, artificial anus, or death from peritonitis may be anticipated. The prognosis is always largely influenced by the duration of the symptoms, especially when local peritonitis is being developed. Laparotomy under such circumstances offers the only chance for a successful termination, for as Marston²³ has said, "there seems no reason to doubt that by a timely operation such cases might be saved."

TREATMENT OF APPENDICITIS.

As the details of laparotomy and its after treatment are to be presented by Dr. Morton and others who will follow, I will only urge upon the Section the importance of an early recognition of appendicitis and the carrying out of a preliminary treatment adapted to intestinal catarrh, such as the administration of 5 grain doses of calomel until 20 or 30 grains are taken, this being often readily retained by the stomach even when it rejects liquids; the free use of stimulating enemata containing soap and turpentine; the administration of hypodermic doses of morphia to relieve the griping, and the administration as soon as the stomach can retain it, of a dose of sulphate of soda or magnesia, the first being preferable. I am aware of the arguments against the use of purgatives in general peritonitis; but I am now speaking of the early stages of appendicitis, with probable stenosis of the canal, and before perforation occurs. In this stage saline purgatives relieve congested vessels, increase the serous discharges, empty the cæcum, and favor the escape of the secretion of the appendix. An important part of the early treatment of appendicitis is, to etherize the patient and by judicious palpation or taxis, endeavor to recognize the obstruction and favor peristaltic action. This palpation should be exercised with the same caution as would attend the attempt to reduce a strangulated hernia. After persevering for 48 hours with this treatment, if relief is not obtained, I would at once resort to laparotomy under strict antiseptic precautions.

The line of incision in laparotomy for perforating appendicitis will be hereafter stated by Dr. Morton. The incision in the median line, known as the Cæsarean section, is the ancient one, a successful operation in a so called case of ileus being reported by Dr. Fuschti in *Hufeland's Journal* of Feb. 7, 1826.²⁴ Whatever incision is selected should be prolonged until the appendix is found. Let the surgeon first look for and examine the appendix for calculus or

²² *Eberle's Practice*

²³ Report of 24 Congress, by Marston, 1888, p. 43.

²⁴ *Eberle's Practice of Medicine.*

perforation, and the subsequent steps of the operation can be decided by circumstances. Generally it is safer to ligate the appendix and cut it off close to the cæcum, and I am satisfied that an early laparotomy offers less risk to life than a temporizing course, that is liable to end in suppuration of the connective tissue of the vascular structure of the cæcum and the development of a general peritonitis. The simple evacuation of the abscess without amputation of the appendix does not secure the patient against a return of the trouble, as was proved in a patient shown me by Dr. Morton, and will be reported by him.

SUMMARY.

The following summary is presented for the discussion of this subject:

1. Appendicitis is characterized by constipation, vomiting, gripping pain, and other symptoms of disturbed digestion.
2. Appendicitis very frequently creates the pathological conditions that result in concretions, ulceration, perityphlitis, or pericæcal abscess.
3. When a diagnosis is made and a preliminary treatment of an intestinal catarrh fails to arrest appendicitis, laparotomy should be promptly performed.
4. A delay in operating in appendicitis, as in strangulated hernia, increases the danger of a fatal termination.

APPENDIX.

The following translation from Herlin's paper, as alluded to in the first part of this paper, was made and forwarded by A. Asst. Surgeon, D. S. Lamb, U. S. Army, but arrived too late to be incorporated in the text. As it exhibits the opinion of an anatomist on the "function of the appendix vermiformis" in 1768, it is now offered for consideration of the reader.

Philadelphia, May 12, 1888.

REFLECTIONS AND OBSERVATIONS ON THE USE OF THE VERMIFORM APPENDIX OF THE CÆCUM.

By M. Herlin, Demonstrator of Anatomy at the Port of Brest. From *Journ. de Med. Chir., etc.*, July, 1768, page 321.

Anatomists have devoted themselves through all time, to determining the use of the parts which they described, and demonstrating their mechanism. Although they have satisfied us as to an infinity of interesting objects by which medicine has profited, it is necessary to admit that they have not yet discovered all, and that there are some parts the use of which is but little known. Since all that has been said upon the use of the appendix of the cæcum does not explain the changes and variations to which this part is subject, and is hardly in accord with the arrangement or the function of organs to which this body appears to be destined, might we not advance what has not been guessed heretofore, viz., to determine the true destination of it. Supported by observation, I shall try to do it, although the result may appear to have but little interest; but it is important always to know what it is, if only to satisfy our curiosity.

Of all the opinions that have been proposed as to

the use of the appendix of the cæcum, it is only that which assigns to it the property of being the reservoir of a mucons humor, flowing continually into the cæcum to lubricate this intestine, and protect it from the acrimony of matters lodged there, which has some truth in it, and which merits attention; but this is very far from filling the idea one ought to have of the utility of this part, as I will soon show. To say with some anatomists, that the appendix of the cæcum is not larger in the fetus than in the adult, (caused by the distension the part experiences from the presence of mucus retained in its cavity by the presence of the meconium) is to hazard an opinion that the inspection of the part contradicts; since we do not find it more sensibly charged with this mucous in early life than in the adult, and one observes on the contrary, that this little intestine is smaller in persons in proportion, as they are more or less constipated and subject to stercoral colics. Another object on which anatomists have passed, and which demands attention, is that the cul-de-sac of the cæcum is scarcely marked in the fetus, but increases more or less with age, and about in proportion as the appendix in developing loses in length; without doubt, because the change is made so insensibly during the whole course of life. The opening of the bodies of some sailors who died of a kind of colic called dry colic, opened my eyes on this subject. I found the appendix of the cæcum in two of the subjects almost entirely effaced; the cæcum and colon enormously dilated and filled with a quantity of hard matter and much rarefied air. The coats of the colon were very thin; its sacs had disappeared, and its ligamentous bands were scarcely visible; while those of the cæcum, continuous with it, and the coats of the cul-de-sac, appeared to have lost very little of their ordinary thickness.

I see then in this, not only the explanation of the phenomena that the cæcum and its appendix have presented to me in the state of disease, but the reason of all the variations naturally seen in the disposition of this organ, which determines more exactly its use.

In order to conceive the thing, it is enough to have present in the mind, the disposition of the cæcum and colon. One soon feels that the matters retained in the cæcum cannot pass out into the arch of the colon, because they would be raised considerably against their own weight, and the power to act on them can have the effect only of pressing them laterally; whence it ought to result that the tendency of the matter would be, that part of the effort would necessarily be lost in the fundus of the cæcum; here we find a point of support that reacts upon them with more advantage as the cæcum is fixed and retained by its ligaments; and as it cannot escape the force which is applied perpendicularly by the stercoral column upon its fundus. This function, continuous and necessary to nature, and which tends without ceasing to dilate and elongate the fundus of the cæcum, would soon thin and burst it if nature had not taken precaution against such accidents by a mechanism as simple as admirable, in sustaining the fundus of this intestine, so that the three

ligamentous muscular bands, which contract the colon, form with it the appendix, and present a part which is insensibly developed, and foreshadows (in furnishing the augmentation of the cæcum) the thinning of the coats, and perhaps in certain cases, the rupture of this intestine, preserving always by this arrangement, of the three bands placed along the length of the colon, an equal and durable force, which would not have been the case if they had been placed transversely and sustained the fundus. It is also to preserve this function, and to render it solid and durable, that nature has thrown a little on one side, the narrowing of the cæcum; the weight of matters thus acts less directly on this part, and development is a little more difficult, and with a slowness which is an advantage. It is quite true that in the appendix there is filtered a mucus; and therefore we should regard it as one of the uses of this part, to furnish a matter capable of lubricating the cæcum, but which, at the same time, is capable of opposing efficiently the extension of the walls of this little intestine which we may regard as a corner stone.

The contraction and the folds of this part, which are larger as the appendix is elevated, and more favorable to turn out the liquor which is filtered into the cæcum, and are intended to prevent the too rapid flow of the mucus, the presence of which in the appendix is necessary to the preservation of its state.

From all these economic views of the use of the appendix vermiformis, it is easy to deduce all the natural or accidental varieties that this part may present in different subjects and all ages. Why, for example, when the appendix corresponds to the fundus of the cæcum, we find it larger and less shrunken? Why, as age increases, this part is found shorter than in subjects where the appendix is placed on the side, and as in this last case, when the appendix is much narrowed and very long, we find in the progress of age the cæcum capacious and its walls very thin. We explain also easily, why women who have had children, have the appendix short, and the cul-de-sac of the cæcum very long; in a word, there are no phenomena which I have mentioned above, which may not be ascribed to this explanation, and confirm at the same time, the use which I believe should be assigned to the vermiform appendix.

breadth and height being about one-half inch, and its shape is the form of a cube. The cavity of the tympanum is apparently lined with a continuation of the mucous membrane of the Eustachian tube, and yet the epithelium is distinct—that of the Eustachian tube is ciliated, whilst in the middle ear it is tessellated, or in squares. This epithelial and subepithelial lining takes the place of a periosteum by transmitting the blood-vessels which supply the bones. This latter fact is important to notice, as any serious affection of this membrane will ultimately react upon the nutrition of the bones forming the cavity, thus resolving a severe catarrh into an otitis. The existence of this mucous cushion is the reason why affections of the middle ear are so numerous in young children. The close contact of the jugular vein to the cavity of the tympanum exposes it to the influence of pus collecting on its floor.¹

In acute otitis media, or inflammation of the middle ear, there are frequently but slight pathological changes in the ear except swelling, deep redness, and small perforations of the membrana tympani. The discharge is either mucus or mucus and pus. This can be shown by the pus dissolving in water, and the mucus found floating on the top.

By the use of anodynes, cocaine, chloroform, morphia, etc., pain is relieved; with the internal use of tincture of aconite, antipyrin, frequent hot foot-baths, with local depletion, inflammation is checked. The parts should be cleansed with a mild, warm, antiseptic wash, and, as a rule, all goes well. The case generally recovers in a short time, without any permanent injury to the hearing apparatus, if not neglected. You, medical gentlemen, are all familiar with this disease in young persons and children, the latter having as many as two, three, and even four, acute attacks during teething, or the result of the exanthemata or cold. This disease is now so well known and, as a rule, so promptly treated, that a much smaller number of cases are now permitted to pass to the second stage of inflammation of the middle ear—the purulent variety—which causes such extensive changes in the hearing apparatus. In such cases of acute otitis media Zaufal finds exclusively the two forms of microbes found by Friedländer and Fränkel in pneumonia, viz.: a large, short bacillus, encapsulated, and a diplococcus, also encapsulated. He has also shown that the exudation in acute otitis media, before rupture of the membrana tympani, contains pneumococci to the exclusion of all other microorganisms, and that these, introduced into the nasal fossæ, can give rise to a meningitis without irruption of the cranial envelope.²

In collecting a large number of cases of suppuration of the middle ear, which includes three or four years, I find that, out of 1,700, 454 were acute, while 1,246 were chronic; 18 had facial paralysis, while the balance included polyp, caries, necroses, cholesteatomata and tubercles. Let me dwell, for a short time, upon some of these changes, the most important and extensive of which are found, not in the

TREATMENT OF ACUTE AND CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR (OTORRŒA).

Read before the Philadelphia County Medical Society, April 25, 1888.

BY LAURENCE TURNBULL, M.D.,

OF PHILADELPHIA.

The cavity of the tympanum, or middle ear, in health is filled with ever-renewed air by the Eustachian tube, and thus the waves of sound reach the labyrinthine nerve of the ear. It is deeply and securely situated in the temporal bone. It measures 2 lines from the membrana tympani inward, its

¹ EXTRA 1 from the author's Clinical Manual of Diseases of the Ear, 1877 and 1878. Philadelphia: J. P. Lippincott Co.

² Annales des Maladies de l'Oreille, January, 1888.

meatus or that portion of the ear covered by skin, but in the mucous membrane of the middle ear, back of the membrana tympani, extending into the mastoid cells, and through the Eustachian tube to the throat and nose. After this disease has existed for some time, there is an increase of the bulk of the mucous membrane, caused by excessive infiltration with round cells, and enlargement, with new formation of vessels.

The subepithelial layer, stripped of its epithelium, is replaced by round cells; a suppurating, granulating surface, traversed by many vessels, takes its place. The purulent process leads to destruction of the tissues, to ulceration and wasting of the mucous membrane, which is eaten away so that the bone is often laid bare.

This is especially the case in tubercular otitis media purulenta, and it has been demonstrated by numerous post-mortems that they tend in a very short time (six to eight months) to extensive necrosis of those parts bordering on the diseased middle ear, and extending into the labyrinth, the rapid course of the disease being due to the tubercular diathesis.

It is also often the case, in this form of disease of the ear, that tinnitus and impairment of hearing precede the perforation, which is most generally painless, but with rapid destruction of the drum-head. By the transformation of the round cells into spindle-shaped, there occurs a formation of a firm connective tissue, which leads to abnormal adhesions between the membrana tympani, the ossicula, and the walls of the tympanic cavity, producing permanent deafness. The membrana tympani almost always suffers a loss of its structure, and in severe and protracted cases we have large perforations.

Treatment.—These perforations are most ordinarily treated by a combination of alteratives, so as to modify the nutrition and prevent the destructive tendency from gaining headway. The local application is also of importance, especially such remedies or local means as change the surface of the granulations, gently stimulate and cleanse them. No agent in our hands has acted so promptly and well as very finely *levigated* boric acid, alone or in combination with iodol, the latter to act as a true antiseptic, using 1 part of the iodol to 10 of boric acid. Boric acid used alone should be sterilized, by heating before using on a platina foil, as it contains fungi and bacteria when kept for some time. The powder must be carried down to the perforation, and through it as much as possible, so as to reach the diseased mucous membrane and the Eustachian tube with the little instrument I show you. If it is blown in, it adheres to the edges of the auditory meatus, causing irritation, and sometimes small abscesses. This powder has a stimulating and an astringent effect, just as alum used in the same manner. It should be packed carefully, so that the diseased membrane be fully covered. It is not necessary to seal it; indeed, it is almost impossible to cause the retention of the pus in the cavity, as the powder absorbs it, and the former when applied produces a watery discharge by its stimulating effect, so that the patient will be obliged to wipe off the liquid.

As to boric acid causing retention of the secretion in the treatment of necrosis of the temporal bone, or in a large perforation, it has not acted so with me. I have used boric acid since 1881, after my return from Europe, and like its introducer, Freidrich Bezold, of Munich, I have been convinced of its efficacy in these severe cases, and that the objections to its use—*i. e.*, its causing retention of the secretions—as advocated by some, are entirely without foundation. According to his and my own experience, extending over a period of seven or eight years, its use has always been followed by favorable results, so *he* had no reason to modify his statements made in 1870,² as to its therapeutic value. He has also confirmed his opinion of the unreasonableness of these objections by a series of physiological experiments, in which he tested the capacity of absorption of powdered boric acid for fluids outside of the body, before, as well as after, saturation and drying out of the powder with purulent secretion which enclosed in a glass tube covered with a perforated membrane was exposed to the influence of fluids from the ear.

This special mode of treatment is peculiarly applicable to large perforations of the membrana tympani; when the perforations are small they are more effectually treated by a solution of boro-glyceride, carbolic acid, or peroxide of hydrogen.

When the perforation is situated in the membrana flaccida or Shrapnell's membrane, with disease of the attic of the tympanic cavity, we resort to a syringe (intertympanic), or a catheter to which a soft rubber ball with a double valve is attached, to withdraw the fluid, and not let it return when diseased; either of which is inserted into the perforation and the parts washed with a solution of peroxide of hydrogen or an antiseptic. If carious bone be found, covered with polypi, the latter should be snared and the dead bone removed; but if the bone be found only inflamed it should be treated by diluted nitric or carbolic acid, to stimulate the granulations and restore it to its normal condition. All tearing and cutting operations—as these tend to malignant disease—must be avoided; everything should be done with extreme care and gentleness. When pus blocks the tympanum in disease of the middle ear the tuning-fork is heard better through the air than through bone. But when the pus is removed, and the inflammation is reduced the bone conduction will again improve as the pressure has been removed from the labyrinth.

It has been found that functional disturbances in hearing are produced by chronic purulent inflammation, by the cicatrices and changes in the membrana tympani, and adhesions before referred to in the middle ear, after all discharge has ceased. First, the alterations in tension of the sound-conducting apparatus, caused by the cicatrices producing irregular vibrations in the membrana tympani. Second, cicatrices which cause adhesions of the membrana tympani with the promontory, and the articulation of the incus with the stapes, impeding the power of vibration of the ossicula. Third, if the adhesions are confined to the portion of the membrana tympani situ-

² Arch. für Ohrenheilkunde, Band xv, and in the *Erztliches Intelligenzblatt*, 1881, No. 26.

ated below the handle of the malleus the acuteness of hearing has been found to be considerable, while adhesions in the upper half of the membrane produce more disturbance of the hearing, or deafness, especially when the handle of the malleus is drawn inward and ankylosed with the promontory. Fourth, it has been proved that imperfect hearing power may exist even in cases of extensive destruction of the membrana tympani, and with the loss of all the bones, except the foot-plate of the stapes—that is, if it were movable, and the membrane of the fenestra rotunda was not thickened. The regularity of our perception of tones is due to the deadening of the sounds produced by the ossicles, the membrana tympani can only be properly considered as a sound conductor in connection with the ossicles. Even if fair hearing of speech and music remain, the removal of the membrana tympani, or protecting membrane of the tympanic cavity, is dangerous to life, for it is deprived of a covering which is essential to its continuation in health. To retain and restore to a healthy condition the diseased and ulcerated bones of the ear and the membrana tympani is of the utmost importance.

Extension of this chronic purulent disease of the ear by the Eustachian tube as a pus-carrier, produces disease of the upper part of the nasal cavity, by developing polypi, enlarging the pharyngeal tonsils, adenoid growths, and hypertrophic enlargements of the turbinated bones and *ozæna*.

We fully agree with Politzer, that combinations of *ozæna* with disease of the ear are much rarer than we would suppose, from the extension of the process toward the entrance of the Eustachian tube. When the ear is implicated, the mucous membrane of the middle ear becomes most frequently sclerosed. In many cases of deviations of the septum we have found perfect hearing, unless complicated with prior ear disease, or exostitis extending through the whole line of the meatus; these are removed by the dental engine. Such cases suffer from coryza or cold in the head, commonly so called, but are promptly relieved by a 4 per cent. solution of cocaine. There are also many cases of anterior nasal polypus which do not produce deafness.

One of the chief causes of deafness is the extension of the pharyngeal tonsil into the tuberosity of the Eustachian tube, and even into its ostium. In the so-called ethmoiditis of "Woakes" there is not necessarily any causal connection between the ear and these affections; in many cases the nasal trouble has long existed without involving the ear. If the ethmoid cells become diseased, or necrosed near the Eustachian tube, then we may have paresis of the palate attended with a distressing form of tinnitus, as in one case under our care, there was perforation of the membrana tympani from extension of the irritation through the Eustachian tube. In this case the patient recovered under local and constitutional treatment. The removal of the diseased specula of bone, or hypertrophied tumors from posterior portions of the turbinated bones, improves the deafness of cases of long standing, when attended with retraction of the membrana tympani, the results of naso-pharyngeal disease. There is an abso-

lute necessity that the pressure of the air—which is fourteen pounds to the square inch—should be equal on both sides of the membrana tympani, and all obstructions to this must be removed to attain perfect hearing. It is of importance that our patients, convalescent from chronic purulent ear disease, should breathe through the nose, and be able to shut the mouth, especially when sleeping, to prevent the drying effects on the throat and Eustachian tube. This is accomplished by a mouth-band tied behind the ear, as recommended by Delstanche, in the case of children, after the removal of the cause. The proper treatment of the naso-pharyngeal disease should always precede this, in order to see that nothing obstructs the respiration, and to watch the controverting effects of all operations by the use of nasal tents of laminaria, or those of platinum, or glass covered by soft rubber, and thus keep up nasal intubation.

1502 Walnut St., April 25, 1888.

MEDICAL PROGRESS.

TRANS-PLANTATION OF NERVE FROM THE RABBIT TO MAN.—DR. GERSUNG, of Vienna, assistant to Professor Billroth, has recently performed a novel and interesting operation—the transplantation of nerve from the rabbit to man. The case has not hitherto been published in any medical journal but, owing to its general interest, the bare fact had found its way into the lay newspapers. Our Vienna correspondent has received from Dr. Gersung a verbal account of the salient points of this most remarkable operation, which has so far been conspicuously successful. The patient is Professor von Fleischl, the distinguished occupant of the chair of physiology in the University of Vienna. Sixteen years ago he accidentally wounded himself while conducting a post-mortem examination, and severe inflammation of the whole right upper limb ensued. During the course of the disease the terminal phalanx of the thumb became gangrenous. The stump thus left was painful, and later on reamputation was performed. This was followed by the formation of neuromata. For this condition the branches of the median nerve which supply the thumb were first resected, together with the terminal neuromata, and at a later period, when new neuromata began to develop, the central parts of the same nerve, together with the branches of the radial nerve which supply the thumb, were resected. Fresh neuromata now developed on the branches of the median nerve, which were treated, without any success whatever, by the injection of hyperosmic acid and electrolysis. Two years ago the neuromata were resected again, and the resection of the nerves was continued as far as the "ligamentum carpi volare;" on this occasion, the branches which supply the radial and the ulnar sides of the index, as well as the radial side of the middle finger, were resected to a great extent. The forefinger now became anæsthetic, except the dorsal aspect of its first phalanx, which, as is known, is supplied by the radial nerve;

in the same way the whole radial side of the middle finger became anæsthetic. The pain, however, again recurred, as after the previous operations, and during the course of the second week after the last operation, the patient became aware that a fresh neuroma was developing. The suffering finally became so severe that the patient wished to undergo another operation, in order to procure, at least, temporary relief. Accordingly the following operation was performed: On March 4 the patient was put under the influence of chloroform, and the neuroma, which was situated behind the volar carpal ligament, was excised, the nerve being cut through behind the neuroma. The peripheral nerve stumps of the two digital branches above mentioned were then sought for. A rabbit was now killed, and as long a piece as possible of the sciatic nerve of the animal, with the two branches into which it becomes divided, was dissected from it (the animal still presenting voluntary contractions). The sciatic nerve was afterwards inserted into the space between the central stump of the median nerve and its digital branches; the central end of the sciatic nerve was sutured to the connective tissue which covered the median nerve, and the two branches were sutured to the digital branches of the median nerve; the portion of nerve, measuring about 6 centimetres, which was deficient was thus made up. After the operation severe pain persisted for some hours, but then entirely subsided. Healing took place by first intention. As two months have now elapsed since the date of operation and the pain has not returned, it may be hoped that the favorable result will become a permanent one. Sensibility, moreover, is becoming reestablished in the part. Dr. Gersung has postponed the publication of the case, because he wished to observe whether complete sensibility would return; he hopes with confidence that this will be the case. The ultimate result will be awaited with great interest; for if it is as favorable as now appears probable, Dr. Gersung's recommendation that the operation should be given an extended trial will doubtless be widely acted on.—*Brit. Med. Jour.*, May 19, 1888.

PATHOLOGY AND TREATMENT OF PERTUSSIS—DR. EDMUND WENDT draws the following conclusions at the close of a paper on this subject:

1. There is constantly associated with whooping-cough a special microorganism, discovered by Afanasieff.
2. This microbe is a small bacillus, having properties that distinguish it from all other known bacteria.
3. The "bacillus pertussis" (*bacillus tussis convulsivæ Afanasieff*) can be readily demonstrated in the sputum of patients having the disease.
4. While its etiological significance appears established, it does not possess much diagnostic importance, since it is found only after the clinical features of the disease are already well marked.
5. The treatment of pertussis has not yet been materially advanced by this discovery.
6. Antiseptics locally applied do not appear to shorten the duration of the disease.

7. Hygiene and judicious alimentation are, in the present state of our knowledge, of, at least, equal importance with medicinal treatment.

8. Antipyrin and the bromides are reliable symptomatic drugs, and are devoid of danger.

9. A specific has not yet been found.

10. Abortive forms of pertussis may occur, but no plan of treatment now known can claim to have abortive efficacy.

Although I have deprecated the habit of recommending particular drugs on the strength of gratifying personal experience, I cannot refrain from alluding to the use of antipyrin in pertussis. Dr. Sonnenberger,¹ of Worms, was the first to call attention to this new drug in the treatment of whooping-cough. He claimed such surprisingly good results from its employment that my sceptical faculty was immediately fanned into activity. Nevertheless, so far as my own limited experience goes, I must own that antipyrin has with me a better record than any other one drug. I can claim no cures from antipyrin. But what the drug has appeared to me to favor, was an easy course of the disease to final recovery, a mitigation of the paroxysms, especially at night, possibly a reduction in their numbers, and certainly a freedom from complications. This is higher praise than I can conscientiously bestow upon any other method of treatment. But I am far from claiming as much as Sonnenberger, for antipyrin, that author asserting it to be distinctly curative. As to the method of its employment, I have followed the directions of Sonnenberger, who gives one-seventh of a grain to very young children, and gradually increases the dose according to the age of the child. To adults he gives fifteen grains. The medicine is administered three times daily, and sometimes once during the night. Children take it readily when dissolved in a little water and raspberry syrup. The remedy should be continued throughout the attack.—*Medical News*, June 2, 1888.

THE BLOOD IN DIABETES—LÉPINE has recorded a case of diabetes which terminated fatally in coma, and in which, for the first time, it was positively shown that in this state the blood loses its alkaline reaction (*Revue de Médecine*). As far back as 1883, at the debate on diabetes at the Pathological Society, Dr. Ralfe first drew attention to the fact that the symptoms of diabetic coma were not unlike those produced in animals poisoned by an injection of acids into their veins, or whenever attempts were made to diminish the alkalinity of the blood by other means; whence the speaker inferred that the poison concerned was of an acid nature, which by decomposition in the urine became converted into acetone. This idea of "acid intoxication" has since been generally adopted, and Minskowski has discovered the presence of an acid (oxybutyric) in diabetic urines which is capable of breaking up in aceto-acetic acid, and thus furnishing acetone. This acid does not, perhaps, exist in the blood and tissues in a free state, but is probably combined with some base with which it forms an acid salt. In Lépine's case, intravenous injection of a saline fluid containing about an ounce

¹Deutsche med. Wochenschrift, April 7, 1887.

each of sodium chloride and sodium bicarbonate to three pints of water was employed when the coma first set in. After this there was some immediate improvement from the coma, the pulse rallied, the temperature rose from 96° to 97.5° F., and the patient could speak, but not swallow. Twelve hours afterward venesection was employed prior to the trial of a fresh injection, when it was found that, in spite of the previous injection of a large quantity of alkali, the reaction of the blood was neutral—a clear proof, Professor Lépine thinks, of the acid nature of the disease, and its power to destroy the normal alkalinity of the blood. It may be a question, however, says *The Lancet*, whether the injection of an alkaline bicarbonate into the blood in diabetic coma is a right procedure. For, though the reaction of the salt is alkaline, yet its constitution is acid, and, as Dr. Ralfe pointed out some years ago, probably acts as an acid salt in its decomposition with other salts in the body, and so actually tends, after the immediate effect of its alkalinity has passed off, to diminish the alkalinity of the blood. Should this, on further inquiry, prove correct, it might be advisable to employ neutral sodium phosphate instead of the acid sodium carbonate for intravenous injections.—*Medical Record*, June 2, 1888.

THE CORRECTION OF NASAL DEFORMITY BY MEANS OF PLASTIC OPERATION.—DR. OBLINSKI, of Krakau, in his paper refers more particularly to deformities resulting from loss of the cartilaginous framework of the nose. Dieffenbach treats this class of patients superficially, recommending the division of the cicatrices, which deviated the point of the nose, by means of a tenotome, and the filling of the nares with lint. This method gives only temporary relief.

In a girl, æt. 16, Prof. Oblinski found the following deformity: The tip of the nose, as a result of the destruction of the cartilaginous septum, was sunken in; on each ala nasi there was a deep longitudinal groove, formed by cicatricial tissue, dividing the lower half of the nose into three spheroidal growths, which eventually would completely obstruct the nares. At the upper end of the right sulcus there was seen an opening through which the air entered into the nostril. The author, after completely cutting out the right groove with its cicatricial tissue, and also incising the opening in its upper extremity, replaced the gap thus left by an oblong flap from the cheek, cut from the upper end of the right sulcus. The flap was 2 cm. long and 1 cm. broad and easily filled the gap. Primary union occurred. The left sulcus was also excised in the same manner, and replaced by the oblong cheek flap. The cosmetic result was satisfactory. The tip of the nose was well raised. The author recommends, however, a larger flap in the future, thus allowing for subsequent contraction.—*Deutsch Zeitschr. f. Chir.*, Band 24, heft 1-2.—*Annals of Surgery*, June, 1888.

CLEANSING THE HANDS.—DR. VOGEL, of Eisleben, says that he has noticed that coppersmiths, tinsmiths, etc., whose hands become covered with dirt from working in oxides and acids which cannot be re-

moved by ordinary means, first rub their hands with warm oil and then, when this has thoroughly penetrated, with powdered borax. Subsequent washing with soap and water makes the hands perfectly clean. He advises those who have to use carbolic acid to go through the process above described first, and claims that in this way (1) disinfection is more thorough; (2) the hands are made purer than it is possible to make them by soap alone; (3) the hands remain soft and free from rough epidermic scales, and the odor of carbolic acid is destroyed; (4) the uncomfortable anesthesia of the hands, after washing with carbolic acid, is avoided.—*Druggists Circular*, June, 1888.

MECO-NARCEIN.—DR. LABORDE has called the attention of the French Academy of Medicine to the valuable soporific qualities of a product derived from opium, to which he proposes to give the name of meco-narcein. Narcein as ordinarily prepared is comparatively insoluble, and therefore has very little physiological effect. He has succeeded, however, in obtaining a product quite free from morphine, and consisting of narcein mixed with various unknown alkaloids. A fifth of a grain induced a calm sleep in a dog weighing thirty pounds, without any apparent after-effects. It would appear to be devoid of the preliminary exciting effects of morphine, and does not derange the digestive apparatus. Dr. Laborde recommends it in the treatment of insomnia of nervous origin, in broncho-pulmonary affections characterized by cough and excessive secretions of mucus, and finally in morphinomania.—*British Medical Journal*, May 26, 1888.

SURGICAL TREATMENT OF DEPRESSED COMPOUND FRACTURES OF THE SKULL.—MR. LAWFOED KNAGGS reports a case (fatal) of compound depressed fracture of the parietal bone, and calls special attention to the following points in the treatment of these cases: 1. The value of the large flap over the crucial incision. 2. The advantages to be derived from a free removal of bone. 3. The desirability of thorough exploration, even by means of a flap of dura mater, in cases where that membrane is injured. 4. The great importance of thorough cleansing with powerful antiseptics, even of the cerebral substance itself in suitable cases, and of endeavoring to secure from the commencement complete asepsis.—*Lancet*, March 17, 1888.

TANNIN WOOL.—DR. RICHARDSON describes in the *Asclepiad*, a preparation designated tannin wool, which he recommends as being of great service in treating ozæna and other diseases attended with fetid odors. It is said to be a ready styptic and to possess good antiseptic properties. It is prepared by adding pure cotton wool, bit by bit, to a saturated solution of tannin in distilled water, at 140° F., until all the solution is taken up; then drying the wool slowly in an evaporating dish. It should be kept in a closed bottle in the rough state, and teased out when required for use.—*Druggists Circular and Chemical Gazette*, June, 1888.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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PENNY WISE—FOUND FOOLISH.

A person who has misappropriated the *nom de plume* "Justice" has published under the auspices of the "Tax Reform Association of Chicago" a pamphlet entitled: "Extravagance is the Cause of the 53 cent State Tax in Illinois." Comparative statistics are pointed, showing the expenditures of various departments of the State Government, including among others the State Board of Health. It appears from the figures quoted by "Justice" from the reports of the Auditor of Illinois that the expenses of the State Board of Health for 1878 were \$1,669.15, while for the two years ending September 30, 1886, they were \$29,841.87. "In what way" then asks the writer, "this obvious increase of expenditures 'were the people of the State compensated for this outlay of money?' The truth is," "Justice" continues, "there is no necessity for the existence of this Board under the pay of the State. There might as well be a State Board of Lawyers to see that none but competent men practice the profession of law."

It may be true that in Illinois taxation by the State Government is excessively high, and it may even be a fact—which "Justice's" pamphlet was intended to show—that such excessive taxation has been due to the predominance of a particular political party in the management of the State Government. Whether true or not, the matter is not one that concerns us as medical men. But in the sanitation of the State, and in the protection of the public health, we have an interest greater and more direct than the mere mercenary considerations connected with tax-paying. And having some familiarity with the problems that

come before a body like the State Board of Health, as well as with the needs of the public, and the necessity of protecting public health, it is only just to the people and to the State Board of Health that the attack of "Justice" should receive more than passing mention at our hands.

The suggestion of a State Board of Lawyers is a little unfortunate for "Justice;" it weakens rather than strengthens the argument, for it is by no means certain that such a Board might not render the legal profession and the people generally invaluable service if it existed. The better members of the Bar admit that of late years not a few of their profession have constituted something not far from a pestiferous public nuisance. There are members of the Bar that do but little business besides procuring divorces, bribing juries, corrupting legislators, promoting litigation, swindling the ignorant and confiding, and defrauding even the strong and well-informed. There is scarcely a corporation but has its "attorney" to engineer projects that cannot for a moment bear the light of investigation, and never is a member of the "wealthy criminal class" unable to secure the services of "distinguished counsel" in the execution of any nefarious scheme that can be cloaked and garmented in the forms and phrases of the law. A State Board of Lawyers, clothed with sufficient power, and having enough conscience and backbone to undertake the herculean task of reforming the Bar, might therefore do effective service in excluding quacks from the legal profession, and purifying the morals of some that would be left.

But "Justice's" fundamental error seems to have been in overlooking the fact that the State Board of Health does a far greater work than that of being merely an examiner of applicants for admission to practice medicine—though its work in performing this duty alone is of some value in saving the public from incompetent practitioners and quacks. That the sanitary work of the Board far exceeds the amount and importance of its work as an examining and licensing body, "Justice" could have perceived—had she not been blind by reason of having the mythical scales over her eyes instead of in her hands—by considering the items making up the expenditures of the Board. In the two years ending September 30, 1886, Dr. Clark, Kreider, Ludlam, Bateman, McKenzie and Haskell received for "expenses as members" \$625.36. In this time these gentlemen attended not less than eight meetings of the Board, for which the amount each received averaged \$105, or about \$13 apiece for each meeting; clearly not an extravagant price. Other items were: vaccine points

\$217.28; vaccinating negro paupers to prevent spread of small-pox \$100; chemical examinations in the Momence meat-poisoning cases and of Chicago water-supply \$550; expenses of a member of the Board in connection with the Momence meat-poisoning case \$100; expenses of a member of the Board for visiting a man affected with glanders \$22.70; detectives for services in investigation \$38.05; Secretary for expenses in investigating and preparing for prevention of epidemics and contagious diseases \$1,878.53. We also find that in the two years the Assistant Secretary was paid \$2,400 for salary, and \$1,271.50 for clerical services—\$1,835.75 a year; other clerical services for the two years amounted to \$6,708.63—\$3,354.31 a year; incidental office expenses for the two years \$2,959.36. Thus far there is no "unnecessary and extravagant use of public money," and we have a total of \$16,471.41. The remaining items of expenditure were for messengers, janitor, merchandise, attorney's fees, secretary's salary, and stationary, printing and binding, which last three items amounted to \$5,973.46. If there was any waste of money in these items it was due to the awarders of the contracts to the "State printing ring," not to the Board of Health.

"Justice" further complains that the Secretary of the Board paid himself \$10,837.89. He did nothing of the kind. Of the amount thus figured \$2,959.36 have been included above as office expenses for two years, and \$1,878.53 have been accounted for under the necessary traveling expenses of the Secretary to provide against the importation of disease into the State. Is he to pay his own expenses when on such business? The remainder of the amount "paid himself" was \$6,000 for salary in two years. Certainly no one will say that this is a princely salary. The Secretary of the State Board of Health receives less salary than any of the three State Railroad Commissioners. "Justice" is singularly silent concerning this Board of Railroad Commissioners. Theoretically it constitutes a body of railway experts; practically, as any one may see from the "Reports," it is officered by men that have not even an elementary knowledge of the practical art in which they are supposed to be experts; and for their "time" they receive \$3,500 a year, the three thus taking \$10,500 from the treasury of the State. It has not been very long since one of them was heard to say that he was "not losing any law practice by the time that he gave to Board." If "Justice" be bent on reform of State taxes this incompetent trinity furnishes ample scope for the practice of economy.

"The truth is," says Justice, "there is no necessity for the existence of this board under pay of the State. . . . In what way were the people of the State compensated for this outlay of money?" Is "Justice" a recent importation into this country and State, or has she yet to hear of the smallpox epidemic of 1880-82 in Illinois? Does she know that the Illinois State Board of Health warned the people in March, 1881, of the threatened danger, when smallpox was at less than half a dozen points outside of Chicago, and urged vaccination and revaccination; that little heed was given to this first warning; that after September, 1881, the epidemic spread to 77 of the 102 counties of the State, causing an aggregate of 8,856 cases, 2,978 deaths, and a loss of \$4,403,968, exclusive of the actual value of human life lost and the disabled condition of many of the survivors; that by January 24, 1882, the epidemic was at an end, chiefly through the labors and efficiency of the State Board of Health of Illinois; and that this action of the Board caused a saving, outside of Chicago, of 1,517 cases, 320 lives, and more than \$2,790,000 (exclusive of actual life-value); enough to pay the present expenses of the Board for about seventy-five years? Is it not perfectly clear that the present expenditures of the Board are less than 2 per cent. of the amount saved to the State and the people in 1882 by its vigilant and efficient Board? If "Justice" wishes to see the figures upon which these statements are based, they can be found in the "Fifth Annual Report of the Illinois State Board of Health," pages 218-20.

No epidemic of any kind has ever been so widely and so intelligently observed as that of which we have just spoken; and the records of the observations, which cover 125 pages of the "Fifth Annual Report," are of very great value to the people, the taxpayers, not only of this State, but of every State in the Union, and will continue to be of value for years to come. And if the lesson taught by that epidemic, and by its extinction mainly through the efforts of the State Board of Health, be heeded by the people of this State, they will be free from further invasions of this kind, and will never regret paying the Board a small percentage on the amount it saved six years ago, to say nothing of the actual dollars and cents saved by it since that time.

"Justice" has something to say, in the same connection, of the National Board of Health. Every one that has looked into the subject knows that this very necessary organization was rendered inefficient, and finally killed, by act of Congress—by the "penny wise, pound foolish" notions (not ideas) of legislative

"Justices." Notwithstanding the fact that cholera and yellow fever have cost this country more than a thousand million dollars, exclusive of the actual value of thousands of lives, in spite of all the light of experience, and of all the easily accessible literature that proves conclusively the absolute necessity of a National organization to cooperate with the State Boards of Health in protecting the people from imported death, there may yet be found a person to write a dime pamphlet in which it is gravely asserted that a State and a National Board of Health are sources of "unnecessary and extravagant expenditure of the people's money."

Until "Justice" has succeeded in abolishing the Board of Railroad Commissioners, or in officering it with competent and efficient men, so that the results of its labors will bear a comparison with, rather than be a contrast to, those of the State Board of Health, she had best "sing small"—if indeed she would not render more efficient service to her "Association" by maintaining a discreet silence.

THE HEREDITABILITY OF HEART DISEASE.

There is a popular belief that heart disease, in its generic sense, can be inherited. Hence many individuals whose parents, one or both, have died of some cardiac affection, are haunted by the dread of the ultimate development in themselves of the same disease.

There is considerable vagueness of ideas, and even a looseness of expression among medical writers concerning the inheritance of disease; as, for example, when congenital syphilis and cancer are both classed as hereditary. In a strict sense the former is inherited, since it is transmitted as such from parent to offspring; whereas the child of cancerous or tuberculous progenitors receives a certain predisposition to disease. He inherits a constitutional defect which renders him peculiarly liable to develop the cachexia of his immediate ancestors, but until it is developed, he is the subject of a diathesis. The diathesis is hereditary in this case, and hence, when the constitutional tendency has borne its legitimate fruit, the disease may be said to be hereditary.

However desirable it might be to hold to so rigid an interpretation of inheritance as opposed to constitutional predisposition, it is impracticable to do so, and one must content himself with the decree of custom. Therefore, although hereditary syphilis is congenital, other diseases accounted hereditary are not necessarily congenital, as, conversely, all congenital disorders are not inherited.

An hereditary disease, therefore, is one that devel-

ops in the offspring as a consequence of a special tendency imparted to the embryo by either the paternal or maternal element, or both, the impression thus made being so strong that the ultimate appearance of the disease, under favorable conditions, is almost an unavoidable certainty.

In accordance with this definition, the hereditability of heart disease depends upon the answer to the query whether or not there can be discovered in families a definite hereditary predisposition to cardiac disorders? Assuredly no one would venture to assert that, because the parent dies of some cardiac lesion, the child is likely to die of it in turn. Yet there is a consideration which should be taken into account in making a prognosis of that child's future health, and is of no small importance to life insurance companies. This is that, although there may not be so striking a predisposition to heart disease as to constitute a diathesis, still there may be some tissue weakness or susceptibility that renders the heart the *pars minoris resistentiæ*. This would seem not improbable if heart disease had existed in several successive members of a given line of ancestors, or been developed in a considerable proportion of the children of a given family. To be specific: if a mother dies of valvular disease induced by inflammatory rheumatism, and all four daughters bear evidence of the implication of the same set of valves, in consequence also of rheumatism, does it not look as if there were a family susceptibility to the same morbid influence? An objector may urge that in this instance the susceptibility can be said to apply only to the rheumatic poison, and that the development of valvular disease is but incidental. True, but the percentage of cases in which endocarditis is developed in the course of rheumatism is comparatively small. Whereas in this family all five individuals attacked by rheumatic fever are left with valvular lesions. Would any physician ignore such a history in treating one of the family for an attack of inflammatory rheumatism?

There are other forms of heart disease, however, in which an inherent tendency seems to play a more active part. These are fatty degeneration and the varieties of cardiac decay dependent upon and associated with arterio-sclerosis. Obesity is often a family trait, yet all such families do not present equal liability to fatty heart. Again, in certain families there is an unmistakable proneness to athetosis, as, according to Fothergill, is so often seen among sturdy Yorkshire squires. Yet in some, the heart is the first to give out, and sudden death from cardiac failure overtakes member after member;

while in other families cirrhotic kidneys are the rule.

The death of Mathew Arnold is a case in point. He died suddenly in consequence of some heart disease, for which Sir Andrew Clark is reported to have treated him for years. We have seen no statement as to its exact nature, but there is a fact in his family history, which, according to the theory of hereditary predisposition, ought to aid one in forming an opinion as to its character. His father, Thomas Arnold, of Rugby, died at the age of 47, during his second attack of angina pectoris, and at the autopsy, his heart was found to be fatty throughout in consequence of insufficient nourishment, since, it had but one coronary artery, and that a small one. Now, if this fact be coupled with that of his son's sudden death, at the age of 66, the inference seems forced upon us that Mathew Arnold's disease was also one of muscular degeneration of the heart, and not valvular. Should this conclusion prove to be correct, it would appear to strengthen the theory of the hereditability of such forms of heart disease.

We believe in hereditary tendencies more widespread than are capable of satisfactory scientific demonstration, and hence, although in the class of cases in question a predisposition is oftentimes too weak to warrant the term hereditary, still we are of the opinion that such a predisposition does exist. It differs from that of tuberculosis, etc., only in degree, not in kind. Facts on all hands go to prove that in each individual there are certain constitutional peculiarities, congenital and not acquired, which govern not only the course and termination of disease, but likewise the susceptibility to its invasion. When such peculiarities are handed down from one generation to another, they become at length sufficiently marked to deserve the title hereditary. It is in this sense, therefore, that a hereditary tendency to heart disease may be established.

HOW TO LIMIT THE NUMBER OF MEDICAL COLLEGES, AND LESSEN THE CROWDED CONDITION OF THE MEDICAL PROFESSION.

The thirty-ninth annual meeting of the American Medical Association, recently held in Cincinnati, has received more uniform commendation from the medical press of this country than any preceding meeting for many years. Of the many good papers and addresses presented during the meeting, perhaps no one is deserving of more attention than the Address of the President, A. Y. P. GARNETT, of Washington, both on account of the subject and the distinct and emphatic manner in which the chief points of interest

were presented. In THE JOURNAL, May 26, we took occasion to call the attention of our readers to what had been done in previous years, both by the Association and by conventions of representatives of the colleges alone, in regard to the adoption of a uniform and adequate system of medical college instruction, as recommended in the second proposition of the President's address.

His first proposition, that the Association appoint "a standing committee, to be called a Committee on Legislation, for each State, Territory, and the District of Columbia, to consist of five members of the medical profession in good standing, three of whom shall have no official connection with any medical school or college," has never yet been tried. The duties of the proposed committee in each State and Territory are "to attend the sessions of the respective Legislatures and use all honorable means looking to the reduction of the number of medical schools in the United States, and a consequent diminution in the annual number of medical graduates," by the passage of laws appropriate for the purpose; and for the creation of a Board of Medical Examiners in each State where such do not already exist, which shall be required to examine all applications for license to practice medicine in their respective States, etc. The objects sought to be accomplished by this plan are all commendable, but the plan itself appears to be unnecessarily complicated in its details, and without any provision for securing uniformity in the action and influence of the several State and Territorial committees. It would doubtless be difficult to find five competent and influential members of the profession in each State who, as a committee, would be willing to spend their time attending the sessions of the several legislative bodies, or who would be asking for the enactment of laws of the same import in the several States. The first and most important step towards the accomplishment of any desirable legislation, is to have a form of law, simple as possible in its details, but accurately adjusted to the accomplishment of that higher standard of both preliminary and professional education so much desired by all. This must be done by a committee, and then receive the cordial endorsement of the National Medical Association and of the several State Societies. It had been confidently expected that such a form of law would be presented by a committee in the Section of State Medicine at the recent meeting in Cincinnati, and if approved by the Section, then to be presented for the approval of the Association in general session. For some reason, the chairman of the committee failed to attend the meeting and

no formal report was made. The committee was continued with instructions to report at the next annual meeting. In the meantime the medical press should be rendering important aid by a candid and thorough discussion of the subject in all its bearings.

EDITORIAL NOTES.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.—At a meeting of the Board of Trustees of the New York Post-Graduate Medical School and Hospital the following appointments were made in the Faculty:

Abraham Jacobi, M.D., Professor of Diseases of Children; Robert F. Weir, M.D., Professor of Clinical Surgery; Peter A. Callan, M.D., Professor of Diseases of the Eye; L. Bolton Bangs, M.D., Professor of Diseases of the Genito-Urinary Organs and of Venereal Diseases; Joseph E. Winters, M.D., Professor of Diseases of Children; O. B. Douglas, M.D., Professor of Diseases of the Nose and Throat. Dr. William A. Hammond, being about to remove to Washington, has resigned his position as Professor of Mental and Nervous Diseases. Dr. Hammond was one of the founders of the school.

ARSENIC IN WINE.—About a month ago a large number of persons in Hyères, France, were poisoned by adulterated wine. Analysis has recently shown that the wine contained a large quantity of arsenic, added for the purpose of hastening fermentation, and considerable quantities of arsenic have been found in bodies of the dead exhumed for the purpose of analysis. A large number of the people of Hyères still present symptoms of arsenic poisoning.

ELEMENTARY RESPIRATION OF THE BLOOD AND TISSUES.—MM. GRÉHART and QUINQUAND have recently reported some experiments on this subject, a portion of them being made with the blood alone, the others with blood in which a certain amount of fresh muscle was immersed. Their experiments show that the blood is simply a carrier of oxygen, and that the blood globules, in so far as respiration is concerned, acts in the same way as the elements of the tissues.

WM. R. WARNER & Co. have issued the following notice to physicians:

"We take this method of denouncing the circulation of certain erroneous reports as being the outcome of either ignorance or malice. We have no connection with the firm of H. H. Warner & Co., of Rochester, who make 'Safe Remedies' and other patent medicines. Our advertising is to the Medical profession."

LEPROSY IN RUSSIA.—Leprosy is on the increase in the Baltic provinces. In Lithuania there are from 250 to 300 lepers; in the district of Dorpat it is estimated that there are 10 lepers to the 1,000 inhabitants. It is now demanded that the government name a commission to study the best means of combating the spread of the disease. A special hospital for lepers is to be founded at Riga, to accommodate 40 patients.

PHYSIOLOGICAL ANTAGONISM.—M. CHOUPE claims that the action of strychnine is hastened by antipyrin, whether the latter be administered before, at the same time with, or after the strychnine. By placing animals under the influence of acetanilide he has antagonized the effects of very large doses of nicotine given afterwards.

SOME MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION purpose leaving about the middle of July to attend the meeting of the British Medical Association at Glasgow in August. For further information, as to rates, etc., address Mr. Chas. Truax, 77 Wabash Ave., Chicago.

TRICHINOSIS IN GERMANY.—For the third time this year trichinosis has appeared in Saxony, at Niederplanitz and Neudörfeld, near Zwickau, where there were about 80 grave cases on May 23.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, April 11, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. JOSEPH PRICE read

A REPORT OF THREE CASES OF OPERATION FOR STRANGULATED HERNIA.

Case 1.—Miss B., white, æt. 40, single, a patient of Dr. Dundore, had had a reducible inguinal hernia of long standing and had never worn a truss. In May, 1887, it became irreducible, and the bowels were completely occluded for three days. Well directed efforts to reduce failing, Dr. Dundore decided upon operative interference, and invited me to see her. The usual symptoms of a strangulated hernia were present, the abdomen being greatly distended and tympanitic.

Upon incision the bowel was found to be firmly adherent to the sac, requiring considerable dissection to free it completely. After severing the stricture, the bowel was pulled out for a few inches, and found to be completely occluded by bands of inflammatory tissue due to limited peritonitis at the point of stricture—the neck of the sac. These bands were broken

up by fingers, forceps, and scissors, which restored the calibre of the bowel and it immediately collapsed. The bowel was very dark in color until released from these inflammatory bands, when its color changed rapidly, and I decided the circulation sufficiently good to restore it to the abdomen. The canal was closed by buried silkworm-gut sutures, the incision with silk. Dry dressing; recovery.

Case 2.—Miss K., white, æt. 75 years, never pregnant, a patient of Dr. F. N. Dercum, who called me in consultation March 1, 1888. Found the patient in bed and very feeble, with a history of complete occlusion of the bowel for twelve days, and stercoraceous vomiting for eight days. The abdomen was much distended and tympanitic. There was a tumor the size of a hen's egg over the right femoral ring which presented no fluctuation nor other symptoms of local trouble. There was also a tumor over the left femoral ring the size of a goose egg, likewise presenting no symptoms of local trouble. The patient said the tumor on the left side had existed for eighteen years, while that on the right side was more recent, but also of several years' standing. Taxis failing to accomplish any results, operation was suggested as the last resort, and was performed the next day at the patient's request. As there were no symptoms specializing either ring as the site of the obstruction, and as the distension was so great that occlusion at some other point was feared, the incision was made in the median line. Examination now revealed that the tumor on the left side was not a hernia, but either a hydrocele of the canal of Nuck, or an old hernial sac that had become cystic. The gut was incarcerated at the right femoral ring, and very firmly adherent. Fearful of tearing the intestine, I made another incision over the tumor, and was compelled to dissect the intestine from its sac. The intestine was then drawn through the median incision and carefully examined. It was found to be greatly congested, but speedily cleared, and was returned to the abdomen. The neck of the sac was twisted upon itself, and transfixed by deep buried sutures of silk, and stitched to the edges of the ring, the canal being closed by deep silk sutures. The median incision was closed with silk sutures. Dry dressings. The bowels moved spontaneously the same evening, and the patient recovered without a bad symptom. Stitches were removed the tenth day.

Case 3.—*Operation for ventral hernia.* (By Dr. Joseph Hoffman.) Mrs. M., æt. 58, married at 19, ten children, four miscarriages. She first noticed the rupture about fourteen years ago, when it was the size of a thimble. She in no way attributes the origin of the rupture to childbearing, which, since she is a large, heavy woman, weighing about 190 lbs., and having a great pendulous belly, would at first suggest the probable cause. The cause to which she attributes the hernia is a rather singular accident. Being, as has just before been stated, a large woman and her belly pendulous, when lying on her side, the abdominal walls, lax and flaccid, lie loosely on the bed. One night while in this position, at the side of her husband, he turned in his sleep, and in so doing put his elbow directly upon her belly, forcing, as

seems probable from her story, the two recti muscles apart. At any rate, from this time on she suffered discomfort, a burning sensation, and finally the hernia appeared. Her husband being a cripple and a fruit dealer, she was accustomed to help him by carrying his baskets from the market, by this means her trouble grew worse. Two or three years after its first appearance she was suddenly taken ill, her bowels refusing to move. Finally, after taking forty cents worth of castor-oil, a movement was secured with great suffering. After this she had a second violent attack in about a year, and from this time on she has had attacks at intervals of about four months, till the time at which Dr. Price and myself operated on her, the last of August. During this period she was seen by six or eight physicians, most all of whom described her trouble as "twisting of the guts," but operation was never suggested. Cathartics were administered to her each time she was attacked, no physician seeming to recognize the fact of their danger, one excepted, who also finally ordered them. At her first attack, it has been omitted to state that she was given up to die. In all she had ten or twelve serious attacks. At her last seizure, in August, 1887, after efforts to secure two other physicians, she came for me. I found the woman in extreme pain, she had not vomited. Examination was made and the hernia discovered above the umbilicus, about the size of a pint tin-cup or larger, very tympanitic and hard. Application of hot poultices was ordered, and a hypodermic of $\frac{1}{2}$ gr. of morphia given. The next morning she was much relieved, the tumor smaller, and altogether she was very comfortable; so much so, indeed, that I omitted my visit the day after. The next, the fourth day, I again visited her, and to my dismay found her vomiting stercora. This was all the more astonishing because I had not been informed of any change for the worse. I at once administered a second hypodermic of morphia, and went for the assistance of Dr. Joseph Price. After some delay I found him, and we operated at once. An incision about 6 inches long was made over the hernia. The integument was very thin, and extreme care was necessary to avoid cutting through the intestine. On getting through into the peritoneum we found it so much thickened that it was at first impossible to distinguish between it and the gut. It was finally differentiated and carefully dissected free from the gut, to which it was closely adherent. The guts, too, in the sac were closely adherent, and separated with difficulty. The sac was tied off and removed. The distension of the bowel disappeared at once on its being freed. The strangulating portion of the sac was so firm as to resist all efforts to stretch it, and only by the utmost care was the bowel released, grasped as if it was in a vise. About 10 inches of the large intestine were found in the sac. This portion was very dark, but not gangrenous. After its release, the gut was carefully washed and returned. The incision was closed by deep and superficial sutures, all of silk. The catgut we happened to have was too slight to withstand the great strain put upon it by the enormous belly walls. Indeed, the silk was little better, for having been so long in antiseptic so-

lution it had become rotten, and was thoroughly untrustworthy. I was unfortunate, too, in the breaking of the curved needles which, having been made for the Hagedorn holder, were not fitted for an ordinary instrument. The operation was, however, completed. The woman made a rapid recovery, and in three weeks was up, and stated herself more comfortable than she had been for fourteen years.

The incision did not suppurate worth the name, and closed promptly, though not smoothly.

Examination to-day finds the patient entirely comfortable, though the recti have again separated. She wears both a band of rubber adhesive plaster and a muslin bandage. Is entirely well. Her belly bandage is $5\frac{1}{2}$ inches in circumference.

DR. JOHN H. PACKARD thought: The amount of material presented for discussion in the papers read is so large that it would be difficult to do it justice.

In connection with the cases of hernia reported, he briefly mentioned another, in which an old femoral hernia was subjected to unjust suspicion. The patient, a woman, about 50 years of age, was brought to St. Joseph's Hospital with intestinal obstruction of four days' standing; her general condition was bad, and she had faecal vomiting. She had an old left femoral hernia, which had given trouble on several occasions, but had always been successfully reduced. This was cut down upon, and the sac found to be empty. Laparotomy was at once performed, a twist of the small intestine being found and relieved, flatus was discharged per anum, and the intense congestion and distention of the bowel relieved so that the mass was easily returned. In spite of vigorous stimulation hypodermically and by the mouth, the patient sank, and died in about six hours. In this case, which will be elsewhere reported more in detail, an earlier operation would probably have had a different result.

As illustrating the difficulties attending the diagnosis of abdominal tumors, a case may be mentioned which occurred at the Episcopal Hospital some years ago. A man was sent down from the medical to the surgical ward to be operated on for an apparently movable tumor situated on the left side of the belly two inches below the level of the umbilicus. It was found, however, that the mass was firmly adherent to the parietes, and the operation was abandoned. The man died a few months later, and an autopsy showed that the disease was epithelioma of the pylorus, which had in some way become displaced and fastened by peritoneal adhesions in its abnormal relation.

The seat of pain is very deceptive as an index of the actual lesions in these cases. A woman who was brought to the Pennsylvania Hospital in 1886 on account of a gunshot wound, complained of pain in the right iliac region only, yet the ball had ranged upward from the left loin to near the right axilla, wounding the pleura, colon, stomach, liver, right internal mammary artery, and right breast.

DR. WM. GOODELL: Some two years ago I operated, performing a double ovariectomy. The cysts were colloid, and there was no indication of malignancy. About a year afterward, the patient then

being apparently well, she fell in getting out of a carriage. There was pain in her right side, considered by her attending physician in the country to be an attack of peritonitis. The pain afterward shifted to the left hip, growing worse and worse. She was brought to me again and I examined her with the utmost care, feeling sure, from the symptoms and from the emaciation that had occurred, that there was malignant disease. I thought that perhaps the stump of the ovary had taken on malignant degeneration. Finding nothing, I called in a distinguished specialist, who twice examined her under ether, but failed also to detect a cause for the pain. The actual cautery was applied along the course of the sciatic nerve, to which region the pain was referred. Death took place in a few weeks, and at the autopsy, which was requested by the lady before her death, disseminated metastatic cancer of the liver was found. Clearly the ovarian disease had been malignant in the beginning, and was the focus from which sprang the hepatic disease. But the salient point here is pain apparently in the sciatic nerve, while the site of disease was the liver.

A few words as to Dr. Barton's case.¹ The patient died probably from acute septicæmia. I have seen so many cases of burst cyst recover, that I have ceased to regard the accident as dangerous unless the general health has deteriorated from chronic absorption of septic material. Of course, this may occur. My last case failed to rally, and died on the seventh day from sheer exhaustion. The rupture had occurred some weeks before from a fall, and the vital powers were slowly impaired, as if by chronic poisoning. Here every abdominal organ was infected and she was greatly emaciated, and also bedridden.

On the other hand, I was surprised to-day by a visit from a patient upon whom I operated not quite two years ago. She had been tapped by a prominent physician in New York, who was unable to remove the fluid because it was colloid. A few weeks later I saw her. She was then very weak and emaciated and confined to her room. At the operation it was discovered that the cyst had ruptured and that every organ was either affected or infected with colloid. Even the skin and the abdominal wall were infiltrated with it where the trocar had entered. I thought she would recover from the operation, but expected death in a few weeks from progressive colloid infection. She was in blooming health when she called on me to-day, and had gained forty pounds.

With regard to the prognosis in these cases of burst colloid cysts, I hardly know what to say. I have seen cases remain well as long as three and four years, and then the disease returned in some other organ. On the other hand, I have had a fatal return in a few months' time. When we open an abdomen and find the whole peritoneum roughened with miliary prominences or with papillary excrescences, are we dealing with a benign or with a malign disease? This is the important question, for it hinges the prognosis; yet I am unable to answer it.

The apparent improvement after exploratory laparotomy referred to this evening, especially in bleeding

¹THE JOURNAL, April 23, p. 518.

fibroids, I have met with several cases, and it is mentioned by others. I cannot explain it. Possibly the irritation from the operation causes uterine contraction, or sets up some change in the circulation.

I think that Dr. Barton removes his stitches too soon. I used to remove them in five or six days. But some years ago a wound, after ovariectomy, reopened and there was considerable oozing of serum. The patient recovered, however. I then allowed the stitches to remain seven full days. In a case of laparotomy in which I had removed the stitches on the eighth day, the patient, who was doing well, got some hot tea into her windpipe on the tenth day, and in the paroxysm of coughing the wound reopened. I had much difficulty in returning the distended bowels, and she died in two or three days apparently from shock, and not from inflammation. Two or three months ago I opened an abdomen to remove the ovaries for a fibroid, under a distinct promise not to touch the tumor. I could not get at the ovaries they were so imbedded in the tumor, and I accordingly closed the wound. On the ninth day the stitches were removed. A few days later, through some imprudence of the patient, the wound burst open to the whole of its length. My son closed it, and the woman barely escaped with her life. In such cases I shall in future leave the stitches in for at least two weeks.

A word as to the use of ether: I had nineteen cases of oöphorectomy last year, with one death. In that case the operation was very easy, yet supuration of urine followed and the patient died from uræmia, which I attributed to the ether. As symptoms of kidney disease were not manifest before the operation, I omitted to examine the urine. Yet serious renal lesions must have existed, and I cannot but think that her life would have been saved, had chloroform been used as the anæsthetic.

I was interested in Dr. Keen's paper,² for the case was my first one of oöphorectomy and the operation was performed *per vaginam*. The operation was not difficult, although the vagina was small. There were marked nervous symptoms after the operation, but no inflammation. The lady had been a patient of Dr. Weir Mitchell for rest cure. She had excessive abdominal pains, profuse menorrhagia and metrorrhagia. Dr. Mitchell recognized a fibroid tumor and requested me to see the patient. The tumor was as large as an infant's head, and we decided to remove the ovaries. This was done on October 4. On November 20, the patient had been so much benefited that she walked two miles to church. She was in such a state of ecstasy over this, that her mother feared she would lose her mind. After that ill-defined pains returned, and there was some bleeding from the vagina. On December 17, I removed a painful neuroma of the cicatrix. The tumor was then reduced in size one-half. In March, 1878, the tumor had become so small that it gave inconvenience by coming down in the pelvis, bringing the womb with it, and I had to insert a pessary. On July 31, of the same year, I found the tumor merely as large as a horse-chestnut and springing from the right side

of the ante-flexed womb. In December she complained of occlusion of the bowel and bleeding at stool, which I attributed to piles. In 1880 there was more or less pain in the left hypochondrium, with more or less nervous phenomena. April, 1882, there had been two slight menstrual flows, with the usual molimina. Later on violent and repeated hæmorrhages from the bowel occurred, which were attributed by the patient to vicarious menstruation. For these hæmorrhages I removed, in February, 1884, a large mass of piles by ligation, and also stretched the sphincter ani for a fissure. Since then I have not seen the patient.

It is interesting to note the rapid diminution of the large tumor. From the size of an infant's head it was reduced in nine months to that of a horse-chestnut. Neurosis was one of the marked features in this case. The patient is excitable, nervous, and of rare intelligence. When I recall the relief after the first operation, her extravagant delight at walking two miles to church, and the fears for her reason, I must confess that I look for a return of the pain once more, for I cannot see the relation between a uterine tumor and a pain complained of high up in the left hypochondrium. The patient was also highly susceptible to certain drugs, and the only anodyne I could employ was cannabis indica in small doses.

DR. M. PRICE: In many cases it will be found that the cause of strangulation of the bowel is adhesion of the small intestine and bands of inflammatory lymph. The pressure and irritation set up slight peritonitis, and finally, adhesions. An early exploration will save life. Handling of the bowel and tearing the adhesions, or snipping them with scissors, will do no harm. Sometimes we cannot distinguish a mass of matted intestine from a tumor, as in the case of a little colored girl I opened the other day. By the time we had separated the adhesions and liberated the intestines there was no tumor. I think that in many cases a fatal result may be attributed to the opium treatment. If any one will employ Epsom salts immediately after the patient comes out from the ether, where he now uses opium, he will never regret it. He will regret the use of opium.

As to removing stitches, if we use silkworm gut we need not give ourselves any concern. They may be left in indefinitely if we choose. They will bear a strain of fifty or sixty pounds, and give no inconvenience of any kind.

DR. JOHN B. ROBERTS: The case of Dr. White renders it appropriate to refer at this time to the historic case of Dr. Levis, known as the "ethyl bromide death," which led to the abandonment of that anæsthetic in this city. The patient was placed under the anæsthetic for lateral lithotomy, for there were but three or four of us at that time in favor of the suprapubic operation. The skin was incised, but before anything more could be done the patient died. A larger, irregular stone, but smaller than this exhibited by Dr. White, was found wedged into the neck of the bladder. The kidney was not markedly diseased, as in Dr. White's case, but there was organic disease of it and of other organs. That death was as independent of operation, and may have been as independent

²THE JOURNAL, May 12, p. 580.

of anæsthetic as was that of Dr. White's patient. I think Dr. White is truly to be congratulated that he had not fixed the day of operation twenty-four hours earlier.

There is another point of interest in both these cases. Such stones can be much better moved by supra-public operation than any of the perineal operations.

DR. H. A. KELLY: I had a case of referred pain due to the presence of fibroid tumors similar to that reported by Dr. Keen. There was much emaciation, constant cough, and a pulse of 120. She coughed whenever I touched the tumor. I performed hysterectomy, removing with great difficulty a mass of tumors, amidst which it was impossible to distinguish the uterus. The stump could not be brought up, and was treated intra-peritoneally. Cough has stopped, weight increased twenty pounds, pain is gone, and the patient is in the best of health and spirits.

The indications for the treatment of the various kinds and conditions of hernia are so different that it is difficult to discuss them together.

In one case, which I watched for years through many attacks, I finally made an autopsy. The patient was very fat and the intestines protruded in a large mass which could never have been returned to the abdomen which had so long been accustomed to their absence. The only operation possible would have been splitting the ring to relieve the tension. In this sac I found the colon and the vermiform appendix with small intestine.

I was called last fall to a case of strangulated umbilical hernia, and finding the patient collapsed and no time to be lost, instructed the husband to give chloroform while I operated with my pocket-case instruments. For suture I employed some embroidery silk lying on the table with which she had been making doilies. After releasing the intestines I split the ring and brought together the opposite side, thus obliterating the sac and curing the hernia permanently. The patient has remained well since.

The stretching of the scar in the so-called ventral hernia after laparotomy is not a true hernia and not liable to its dangers.

Three weeks ago I saw a man who had developed typhoid symptoms, followed by rupture and escape of fecal matter from the scrotum, due to the strangulation of an old incarcerated hernia of 25 years' standing, caused by jumping down a cliff in the Fort Pillow massacre. The hernia was formed by a diverticulum from the bowel, and the whole mass, with the adherent sac, was one gangrenous mass which was removed in shreds, leaving a large opening in the bowel. I had no good available tissue to close this, and used his right testicle, which I fitted into the opening, and secured by a row of stitches around its circumference, being careful not to allow any stitch to penetrate the substance of the testicle. This has healed perfectly *in situ*, and the bowels have moved naturally and regularly. Some years ago Dr. Hunter reported a case to this Society, in which a man repeatedly pulled his testicle up to support and inguinal hernia, when to his surprise one day it stayed there, and finally became adherent, curing the hernia.

DR. KEEN: I think the difference of locality between lesion and pain, referred to so much this evening, will probably explain the pain in my case. I would like to ask Dr. Goodell which of the tumors in the specimen he would consider the original one?

DR. GOODELL: The intra-mural one. The great diminution would hardly have occurred otherwise.

DR. KEEN: A point elicited in our papers and discussion this evening is the reciprocal invasion of gynecological surgery by the general surgeon, and general surgery by the gynecologist. Nothing but good can come from this. It will be mutually advantageous.

DR. BARTON: I must bow to Dr. Goodell's authority in the matter of removal of stitches; and yet my own tendency, growing out of experience, is to take them out earlier and earlier. I think that by this I avoid suppuration. There is a difference between the lax abdominal wall after the removal of a thirty or forty pound tumor, and the tense condition of that wall after operations of the class I have been most engaged in. In these the great tension often causes suppuration if they are permitted to remain long. In order to afford support after removal of stitches I have been in the habit of taking two large pieces of adhesive plaster and cutting a series of tails upon each and fastening one piece on each side of the abdominal incision. These plasters are long enough nearly to reach the spine on each side, they are laced in front with heavy thread and are tightened as necessary by taking up the slack in the thread.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, March 23, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D., IN THE CHAIR.

(Concluded from page 663.)

DR. J. C. HOAG read a paper on

SOME CONSIDERATIONS REGARDING DEATH OF THE FETUS IN UTERO.

A careful inquiry concerning the comparative frequency of premature expulsion of the impregnated human ovum can scarcely fail to surprise the physician, although anything like statistical accuracy in its determination is, for very obvious reasons, an utter impossibility. In making up an approximate estimate, one must needs remember that the impregnated ovum is often discharged at a menstrual period without the patient's knowledge of any unusual circumstance beyond an increase in the discomforts which often attend menstruation, and which are not infrequently attributed to trivial causes. To say nothing of the patient's ignorance, the physician himself is frequently unable to decide whether such an occurrence has taken place, even after an examination of the menstrual discharges.

Good authorities are of the opinion that we may safely reckon one case of abortion in the first months of pregnancy to every eight or ten cases of parturi-

tion at full term. Accordingly, the importance of careful study, to ascertain as fully as possible the proximate causes of this occurrence, cannot be over-estimated, and still the writer believes that there is evidence of great apathy on the part of the profession in this respect, as evidenced in the very terms employed in classifying the causes of abortion. The convenient term "habitual abortion," for example, is one which cloaks a great part of our ignorance of this subject. Such an expression as "abortion from unknown causes," would at least be preferable as holding forth in its very confession of ignorance an inducement to explore its unknown depths.

As an example of the unsatisfactory state of our knowledge in this direction, one need only turn to the reports of large lying-in hospitals. In an interesting analysis¹ of two years' work in Prof. Gustave Braun's Clinic, 6,230 labor cases are reviewed. Premature labor occurred in 565 cases, the causes being tabulated as follows:

Syphilis.....	(about) 70
Pulmonary tuberculosis.....	0
Peritonitis.....	2
Other fevers.....	23
Faulty placental insertion.....	10
Vitium cordis.....	1
Injuries.....	7
Eclampsia.....	1
Induction of labor.....	4
Twin pregnancy.....	43
Total.....	170

This leaves 395 cases to be relegated to the category of the unknown.

In Braun, Chiari, and Spaeth's analysis of 7,835 cases of labor occurring in the Vienna Hospital for the year 1850-1851, 303 cases of premature labor are included. In only 126 cases, or one-third, could the cause be definitely determined.

Causes of the Premature Interruption of Pregnancy.—These may be considered as they relate, 1st, to the father; 2d, to the mother; 3d, to the ovum; and 4th, to traumatism.

Causes referable to the father.—These are constitutional vices, particularly those of syphilitic origin.

Causes referable to the mother.—Those include general and local diseases, climatic and hygienic influences, and finally certain idiosyncrasies which seem to be productive of abnormal irritability on the part of the uterus, even in the absence of recognizable lesions.

Causes referable to the ovum.—These comprise all diseased conditions of the fetus and its appendages.

Traumatism includes accidents, efforts at criminal abortion, and the justifiable induction of labor.

In considering the subject of abortion in general, one can scarcely fail to be struck by the disproportionate frequency in multiparæ, and this seems clearly to depend on local diseases, such as endometritis, metritis, and uterine displacements.

With regard to diseases of the ovum I quote from

Charpentier's work as follows: "Considered as a whole, the ovum represents a membranous sac composed of two membranes peculiar to it, the amnion and the chorion, and of one membrane of uterine origin, the decidua, a sac which contains the fetus, the cord, the placenta, and the amniotic fluid. Each of these parts may be the seat of lesions constituting the pathology of the ovum."

If we exclude attempts at criminal abortion and the justifiable induction of labor, traumatism may be said to include only a small proportion of the causes of abortion; thus, in the two analyses above referred to, we find only fifteen cases referable to injuries in a total of 904 cases. These figures, would not, however, represent the proportion in private practice. But whatever may be the mediate causes of the interruption of pregnancy, the death of the ovum is almost without exception the immediate cause of the awakened uterine activity and the premature expulsion of the product of conception.

Death of the fetus may be determined by disturbances of nutrition, due to faulty development of the ovum, and especially its appendages, which lead to abstraction from the fetus of its supply of nutriment and oxygen. This may occur when the energy of growth in the membranes is so considerable as to unduly divert the blood supply to their development at the expense of the fetus, or when suddenly or gradually the exchange of blood between the mother and the fetus is obstructed or destroyed, the one condition prevailing in cases of inflammation of the membranes, which, when affecting the chorion, results in the formation of moles, the other when the uterine mucous membrane is the seat of the chronic inflammation known as endometritis decidua.

Again, the exchanges between fetal and maternal blood may be impaired by maternal hemorrhages, whether from the uterus or from other organs; thus, in cases of hypertrophic development of the tufts of the chorion, the fetal vessels may be so compressed as to fill the maternal blood-spaces, as seems to be the case in syphilitic disease of the membranes. Extravasations from the placental vessels may also compromise the circulation of the fetus, and when extensive cause its death. These extravasations may be produced by comparatively slight mechanical influences, in cases where the vessels have very thin and delicate walls, and particularly in cases of fatty infiltration consecutive to endometritis. Again, extravasations may be caused by local hyperemia due to the abuse of alcohol, or to fever, uterine displacements or organic diseases of the heart, lungs, or liver.

As for syphilis, this may cause the death of the fetus either primarily or secondarily. When it develops late in pregnancy, the fetus may reach full term. When it develops earlier, it is much more likely to result in the interruption of gestation.

The point of this paper is to draw attention to the influence of endometritis, in determining the premature expulsion of the ovum. The great frequency of this disease is a matter of daily observation, and its influence in the production of abortion cannot be doubted. If a woman aborts frequently, we are apt

¹ Klinische Mittheilungen über Geburt u. Wochenbett, etc., von den Jahren 1850 bis 1851, First.

² The terms premature labor, abortion, miscarriage, immature delivery, etc., are variously used that the writer prefers to quote the exact expressions used by the different authors.

to say she aborts because she has aborted, she is the subject of habitual abortion. With this we content ourselves, whereas, no doubt, a careful study of these cases would often lead to the discovery of a pathological cause of remedial nature. That a lack of fecundity on the part of a woman is often due to an endometritis, and is overcome by a cure of the diseased condition, is a matter of frequent clinical experience. That systematic writers mention the rôle played by endometritis in the production of abortion, and mention the treatment of the disease as one of the prophylactic measures in the prevention of abortion, is of course, true, but it may be safely asserted that the great importance of this subject has not been sufficiently insisted upon, and that, if attention be especially directed to it, the causes and treatment of so-called habitual abortion will soon become much better understood.

In endometritis, extravasations into the hypertrophied tissue of the decidua often take place. If the disease is of moderate extent, or if it develops late in pregnancy, and does not involve the placenta itself, it may be borne without influence upon the development of the fetus. If, however, it develops earlier or in a severer form, it may often compromise the life of the fetus by leading to endometritis decidua with its hyperplasia, extravasations, and fatty infiltrations. If the placental decidua be involved, labor, when it comes on, is apt to be complicated by adherent placenta with its consecutive dangers. The frequency with which one meets examples of adherent placenta, in cases of labor which are otherwise normal, is to me a hint of a link connecting endometritis with abortion. The discovery of the true pathology of the puerperium has been one of the grandest life-saving discoveries of all times, and in the pathology of pregnancy we have a field which may be made productive of almost as rich harvests of human lives.

Report of Case.—I now offer for your inspection a specimen of macerated fetus with its appendages. The patient who gave it birth was born in this State. She is 24 years of age, well-developed, weighing about 160 lbs., is strong, and claims to have enjoyed very excellent health for the most part. She was married three years ago, her husband being a skilled mechanic of exemplary habits and enjoying fairly good health. Seven months after marriage the patient gave birth to a macerated fetus of six or seven months' development. One year later, this occurrence was duplicated. About a year and a half later still, she gave birth to the fetus which you now see.

The placenta of the first fetus was somewhat adherent, and did not come away entire. The patient spent two weeks in bed and, according to her own statement, was pretty sick. Subsequent to this she enjoyed good health until after the birth of the second fetus, since which time she has not felt as well as before marriage.

A leucorrhœal discharge made its appearance after the birth of the second fetus, and has continued most of the time to the present day, and since this event, her menstrual periods have been accompanied by pain, headache and fever. The patient has never

flowed much during labor, and never at all during gestation.

My acquaintance with the patient began on the 28th day of last December, when I was informed that she had reason to suspect that pregnancy had been interrupted, and requested an examination. I had no hesitancy in pronouncing the fetus dead, whereat she expressed great regret, saying she had long desired a child, and had believed that this time her hopes would be realized. The examination revealed a doughy condition of the belly, which was not distended in proportion to the supposed period of gestation. The position of the fetal parts could not be made out. The os externum admitted one finger. A thick muco-purulent discharge, of disagreeable odor, was present in considerable quantity.

As regards subjective sensations, the patient said that the last fetal movements had been felt four days before, and that they had grown gradually feebler before altogether ceasing. She had also experienced sharp pains in the abdomen, and had noticed a feeling as though the fetus had turned over, such as is often described in connection with a dead fetus. She had not, however, noticed the other sensations of mawkish taste in the mouth, languor, and a sensation of cold in the abdomen from stoppage of the fetal circulation, and concomitant abstraction of heat from the uterus—a phenomenon, by the way, which has been made available as a diagnostic point in determining whether the fetus has died or not.

I advised the patient that she might expect the expulsion of the fetus in about ten days, and requested her to use the vaginal douche.

On January 5, twelve days after the cessation of fetal movements, I found the patient in the second stage of labor, the pains having begun some hours before. I had barely time to offer support to the fetus before it was discharged, with the membranes intact, the placenta soon following under the influence of gentle compression of the uterus. The placenta was intact, and labor ended with a moderate discharge of blood. With the exception of the presence of a small fresh coagulum on the surface of the placenta, a pale color, and considerable friability of its tissue, I could discern nothing abnormal in its appearance.

The fetus itself is 14 inches long, and corresponds to the sixth month of development. It exhibits the usual appearances of maceration in the softening and separation of the epidermis, the dark discoloration of the corium, the flaccidity of the body, the separation of the cranial bones, and the looseness of the scalp. These appearances remain very much the same now as they were at birth, and you may judge them for yourselves.

Subsequent to labor the patient felt very well, with the exception of painful contractions of the uterus and distension of the breasts, conditions which received appropriate treatment. At noon of the sixth day of the puerperium, I was struck by the flushed appearance of the patient's face and, upon inquiry, found that she had awakened that morning with a severe headache; but it required additional interrogation to elicit the fact that she had also experienced

a chill (which she referred to as merely coldness of the feet), and some additional severity in the pains from uterine contractions. The temperature, which up to this time had been nearly normal, was now found to measure 100.5° . The lochia was somewhat fetid, but the patient said she had passed no clots whatever. A vaginal examination revealed a subinvolved uterus. The patient accordingly presented every appearance of one about to enter upon child-bed fever.

At 5 o'clock P.M. the temperature was 101.5° . With the assistance of the husband I placed the patient upon her side and, introducing a Sims' speculum, proceeded to thoroughly irrigate first the vagina and then the uterus with a carbolic acid solution, employing for this purpose the long glass fenestrated nozzle with double curve, and facilitating its introduction and the subsequent procedures by the use of the double tenaculum forceps. With a good-sized curette of a modified Sims' pattern, I next proceeded to scrape the placental site, with the result of bringing away what seemed to me an enormous quantity of soft pulpy material, composed almost wholly of fibrin and blood corpuscles, and which I now offer for your inspection. I estimated the total bulk of this material as about equal to the volume of a 3-oz. phial. At first I was unable to reach the fundus uteri with the instrument, but after repeated efforts, which resulted in bringing away consistent masses half as large as one's finger, I was able to reach every part of the endometrium. Every stroke of the curette dislodged masses of fibrin, but even after a most vigorous scraping the endometrium at the fundus had a rough, knobby feel.

Following the use of the curette with a renewed employment of the douche and placing some pencils of iodoform in the uterus, I arranged the patient comfortably in bed and was interested to measure her temperature. It had subsided 1.5° . The following morning I find the patient, after a good night's rest, with a normal temperature and feeling far more comfortable than at any time since her labor. The temperature remained normal for three days, when it exhibited a considerable exacerbation. I accordingly introduced a Sims' speculum again and thoroughly douched the uterus. The speculum was necessary, because I found it impossible to introduce even the convenient nozzle above described without it, and this leads me to remark, parenthetically, that after having employed the intra-uterine douche for nearly six years, I have reached the conclusion that it is occasionally quite impossible to administer it without the assistance of the speculum, and that unnecessary violence is often resorted to in attempting to introduce the nozzle. In my case, even with the speculum it was not easy to do so without the aid of the tenaculum. As a corollary to this proposition, I venture the assertion that the physician often deceives himself in believing that he has administered an adequate intra-uterine douche when, in point of fact, the nozzle of douche has barely entered the cervical canal. After the second and last douching, my patient made a rapid recovery.

In this case I am satisfied that neither the patient

nor her husband has ever been the subject of syphilis. The patient herself has undoubtedly long suffered from endometritis, although this was perhaps not the occasion of her first mishap. I believe that a repeated application of the curette in this case and the additional application of topical remedies will effect a cure of the endometritis, and enable her to give birth to a healthy child, if she again become pregnant.

I have said nothing, however, as yet, with regard to another point which may have some bearing on the causal relations of foetal death in this case. The patient has an abnormally slow pulse, the heart often pulsating as infrequently as forty-four beats to the minute. The relations of heart disease to pregnancy and parturition have been discussed by various authors, and Matthews Duncan² has suggested the possible influence of such diseases upon the production of abortion.

The more I use the curette in puerperal cases, the better pleased I am with it. I prefer an instrument with a large scraping surface and with a long shaft, set in a convenient handle. The presence of foreign bodies in the puerperal uterus is sure to obstruct the progress of involution, and the depth of the canal is altogether disproportionate to the size of the retained decidua or placental tissue or coagulum. Duncan has reported a case where a small bit of placenta was retained in which, at the time of the removal of the tissue eight months after the expulsion of the foetus, the uterine canal was 8 inches deep. In my case I found that involution had made no progress at the time of the curetting, and the instrument which I used, although 11 inches long, was almost too short.

I cannot help feeling that the employment of the finger-nail as a curette is a dangerous procedure. It is of interest in this connection to note the results of some recent experiments by Prof. Fürbringer, as reported in the *N. Y. Med. Record* of March 10. The experimenter, employing for his subjects thirteen assistants and chiefs of clinics, required them to thoroughly disinfect their hands according to the most approved methods. He then succeeded in extracting enough septic material from under their finger-nails to start colonies in twelve out of the thirteen cases.

For my own part, I infinitely prefer the curette, which I do not hesitate to use in any case of abortion where I suspect the retention of even small quantities of matter, if I deem a removal of it requisite.

I have made some microscopic examinations of the specimen presented this evening, but will refrain from a discussion of the minute pathological aspects of foetal death at present, hoping to make the subject one of more extended study at some future time.

A word with regard to the management of labor in general may not be entirely out of place in this connection. I lean more and more to the side of conservatism in obstetrics. I do not believe that it is best to use even the vaginal douche after labor without some special indication for it. As for the intra-uterine douche and the curette, I think they are not very often needed, but that when either one of them

² Matthews Duncan, *Clinical Lectures*, 1880.

is required, the other is apt to be needed too, and certainly I would not think of using the curette without both preceding and following its use with the douche. Further, a single intra-uterine douche is often worth more to the patient, if properly and thoroughly given, than a dozen.

Finally, I would like to reinforce what I wrote in a previous paper, read before this Society, with regard to the value of auscultation and external palpation as enabling us to avoid frequently repeated vaginal examinations. I have very recently read with great interest that Cr  d  , always a conservative and successful obstetrician, has of late practically abandoned vaginal examinations, and teaches others to do so. At the time when the paper above referred to was read, I was unaware that any one had ever definitely insisted on this point.

DR. P. S. HAYES: I was glad to hear Dr. Hoag say that there was difficulty sometimes in administering the intra-uterine douche. His case brings forcibly to mind a case I had, where Dr. Nelson was called in consultation. The woman had a strongly adherent placenta. She had at the third or fourth month attempted to produce a miscarriage by the oil of tansy, or something of the kind, and had failed, but she had produced a good deal of irritation and, as a result, there was a strongly adherent placenta. I had to introduce my hand to remove the placenta. A few days afterwards she developed puerperal fever, and the strangest part of it was that apparently there was no odor. I used intra-uterine injections, and after one or two injections she had a chill and high temperature, and I found a difficulty in introducing the tube. In order to introduce the tube, I placed my hand on the abdomen and pushed the uterus upwards and backwards, and when that was done, there was a free discharge of fetid lochia which had accumulated there. While I did not use a speculum, I think if one had been used, and the tube carried to the fundus every time, the case would have required fewer injections to have made the good recovery which she eventually did make. In this case there was undoubtedly an antelexion of the puerperal uterus, which effectually closed the uterine canal and caused the accumulation of the lochia in the uterine cavity.

DOMESTIC CORRESPONDENCE

"SPONTANEOUS" INFECTION.

Dear Sir:—There is but a single word in your excellent editorial ["On Spontaneous and Contact Infection in Puerperal Fever," *THE JOURNAL*, May 19, 1888], that I hope will not sink deep into the mind of the profession. In contradistinction to contact infection, you recommend on the authority of Miculicz the term spontaneous infection. I hope that the use of the word spontaneous will not prevail. It has had too unfortunate a history in biological literature to be used in any ordinary sense with infection. The signification that it acquired through the long discussion between Bastian and Tyndall cannot so soon be

modified as to adapt it to use in this connection. It must hereafter mean what it did mean when the subject of spontaneous generation of bacteria was under discussion. Spontaneous infection in such a sense is, in the light of modern bacteriology, either an absurdity, or is calculated to deceive and perpetuate incorrect notions of infection. There is no longer a doubt that infection means invasion with living microbes. The spontaneous development of a human organism in the uterus would be no greater miracle than the spontaneous development there of the infecting microbe. Very respectfully,

BAYARD HOLMES, M.D.

1535 Bowen Ave., May 23, 1888.

[The use of the term spontaneous, in the designation of a certain class of cases of puerperal infection, is not free from objections, and Dr. Holmes' criticism is pertinent. But we employed the word, in the editorial mentioned, in a sense strictly technical and clearly defined. We still think the expression, spontaneous infection, as thus limited, preferable to the words auto-infection or self-infection, chiefly because its exact, technical signification in surgical literature is well-known and very generally accepted. In the use of words, as Professor Hill remarks, there is only one sound principle of judgment. That principle is not etymology, but good use; *i. e.*, *reputable, national and present use*.

The fallacy of ambiguity, that Dr. Holmes points out in his friendly stricture, we think is apt to arise in the processes of the popular, rather than of the professional mind. We are addressing a special class of educated men, and we have nothing whatever to do with popular impressions as to the meaning of this much abused word. At the same time, we are prepared to admit that a better term may be, and probably will be, coined.—ED.]

SEXUAL DESIRE IN INFANCY.

Dear Sir:—The following seems worthy of record, as I am unable to find a case on record where there was evidence of sexual feeling at so early an age. Female, aged eleven months; has always been well. When ten months old the mother first noticed that when the child was left alone, on the floor, or bed, or in her cab, she would frequently go through some peculiar up and down motions of the pelvis, continuing thus for a minute or more, and then ceasing for the time. The mother finally concluded the motions were made to satisfy a sexual desire, and that the child desisted only after experiencing something corresponding to an orgasm. The father was sent to consult me about the matter, and as was natural, I was somewhat skeptical about the mother's diagnosis, and advised the father to have the case more closely watched and report again in a few days. In a day or two the mother brought the child to my office, and stated that in addition to what the father had reported to me, she had noticed that whenever the baby perceived that she was observed in her exercises, she would immediately stop and show every appearance of shame, *i. e.*, would cover her face, and appear confused and excited. On examination of

the external genitals I was unable to discover anything unusual, except that the clitoris seemed a trifle large, and rather a brighter red than normal.

The parents are perfectly trustworthy people, and could have no conceivable motive in misrepresenting the matter. So it seems to me we must accept this as a case of manifestation of sexual feeling and attempt to satisfy this feeling, in a child of less than one year of age.

M. G. SLOAN, M.D.

Dexter, Iowa, May 11, 1888.

BOOK REVIEWS.

INTUBATION OF THE LARYNX. By F. E. WAXHAM, Professor of Otology, Rhinology and Laryngology, College Physicians and Surgeons, Chicago. Pages 110. Published by Charles Truax, 75 and 77 Wabash Ave., Chicago: 1888. Price, \$1.25.

The present small volume is probably the most complete and best description of the subject of intubation that has been placed before the public. Dr. Waxham is already so well known by his numerous articles upon this subject that we need hardly say that his authorship of the book makes it authoritative.

The history of the operation, the anatomy of the larynx as it pertains to the operation; the method of performing the operation; the after treatment and numerous illustrative cases are described. The book is well illustrated and the publisher has made a very attractive volume.

Intubation has succeeded so well in the hands of Dr. Waxham and of others who have given it a fair trial that the profession have justly come to look upon it as a most important operation.

MISCELLANEOUS.

NEW HAMPSHIRE MEDICAL SOCIETY.—The ninety-eighth annual meeting will convene in the Hall of the G. A. R., 15 Warren St., Concord, Tuesday, June 10, 1888, at 11 o'clock A.M. *President*, Dr. S. W. Roberts, Wakefield; *Secretary*, Dr. Granville P. Conn, Concord.

ASSOCIATION OF AMERICAN MEDICAL EDITORS.—The regular annual meeting of the Association was held at the Burnett House, Cincinnati, Monday evening May 7, 1888, and attended by a larger number of representatives of the medical press than usual. The President, Dr. Wm. Porter, of St. Louis, delivered an interesting address. (See *THE JOURNAL*, May 12, 1888.) After the discussion of several questions, Dr. Mathews, Chairman of a Committee previously appointed, reported a constitution and By-laws which were adopted.

Dr. W. C. Wile, of the *New England Medical Monthly*, Danbury, Conn., was elected President for the ensuing year; and Dr. J. C. Cullerton, of the *Cincinnati Lancet-Clinic*, Secretary and Treasurer. The next annual meeting is to be held in Newport, R. I., on the first Monday evening in June, 1889.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—*Preliminary Announcement of the Committee of Arrangements.*—This Association will hold its first triennial session in the City of Washington, during the 18th, 19th, and 20th of September next. The meetings of the Congress will be held in the evenings, beginning at 8 P.M., and those of the Societies composing the Congress will be held during the daytime, ac-

cording to the programme each may respectively provide. The sessions will be open to the profession.

The Local Committee of Arrangements of the Congress has secured places of meeting for the Congress and each society in close proximity, so that the members of the respective societies can interchange attendance at pleasure, without inconvenience.

It is the purpose of the Executive Committee of the Congress to print the programmes of all of the societies, provided copies be supplied on or before August 15.

The Local Committee requests the secretaries of the societies to forward the names of those of their invited guests who have accepted their invitations, designating them as Foreign and American.

The Committee of Arrangements is composed of one member of each society represented in the Congress, as follows:

Samuel C. Busey, Association of American Physicians, Washington.

J. Ford Thompson, American Surgical Association, Washington.

R. T. Edes, American Neurological Association, Washington.

E. C. Morgan, American Laryngological Association, Washington.

W. W. Johnston, American Climatological Association, Washington.

J. E. Atkinson, American Dermatological Association, Baltimore.

A. Sydney Roberts, American Orthopedic Association, Philadelphia.

H. Newell Martin, American Physiological Society, Baltimore.

Samuel Theobald, American Ophthalmological Society, Baltimore.

S. O. Kichey, American Otological Society, Washington.

A. T. Cabot, American Association of Genito-Urinary Surgery, Boston.

Inquiries may be addressed to the Chairman, Dr. Busey, at Washington, or to the representative member of each society on the Committee.

It may also be stated that the Committee of Arrangements of the American Gynecological Society, which will hold its next annual meeting in Washington at the same time, is composed of Drs. Busey, Taber Johnson and King.

HEALTH IN MICHIGAN, APRIL, 1888.—For the month of April, 1888, compared with the preceding month, the reports indicate that tonsillitis, influenza, and bronchitis decreased in prevalence.

Compared with the preceding month, the temperature in the month of April, 1888, was much higher, the absolute humidity was much more, the relative humidity was much less, the day and the night ozone were about the same.

Compared with the average for the month of April in the nine years 1879-1887, measles were more prevalent, and consumption of lungs, intermittent fever, remittent fever, diphtheria, pneumonia, bronchitis and scarlet fever were less prevalent in April, 1888.

For the month of April, 1888, compared with the average of corresponding months in the nine years, 1879-1887, the temperature was slightly lower, the absolute humidity, the relative humidity, the day ozone and the night ozone were slightly less.

Including reports by regular observers, and others, diphtheria was present in Michigan during the month of April, 1888, at 20 places, scarlet fever at 43 places, typhoid fever at 15 places, and measles at 45 places.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING

JUNE 2, 1888

P. A. Surgeon F. C. Craig, detached from Naval Hospital at Norfolk, and to the Naval Hospital at New York.

Asst. Surgeon A. R. Wentworth, detached from the U. S. S. "Galena," and to the Naval Hospital at New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JUNE 2, 1888

P. A. Surgeon S. C. Devan, granted leave of absence for ten days. May 29, 1888.

P. A. Surgeon P. M. Carrington, granted leave of absence for five days. May 29, 1888.

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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ORIGINAL ARTICLES.

THE DIAGNOSIS OF PERICÆCAL ABSCESS, AND ITS RADICAL TREATMENT BY REMOVAL OF THE APPENDIX VERMIFORMIS.

Read in the Section on Surgery at the Thirty-Ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY THOMAS G. MORTON, M.D.,
OF PHILADELPHIA, PA.

Abdominal surgery can show many brilliant achievements under modern antiseptic methods, but in scarcely another instance does an operation so completely afford its own justification, or when properly timed present such satisfactory results, as laparotomy when performed for suppurative appendicitis.

PATHOLOGY AND CLINICAL HISTORY.

It will greatly simplify the subject under discussion if we can first clear up the nomenclature, which, it would seem, has been more or less confused by the refinements of pathologists and others. We are accustomed to certain distinct terms to express inflammation of the cæcum, of its peritoneal investment, and of the surrounding structures and cellular tissue.

It would seem reasonable that all the niceties of diagnosis between typhlitis, perityphlitis, paratyphlitis and pericæcal abscess can properly be set aside, as without real practical value; since recent pathological researches have demonstrated that, as a rule, in cases presenting the well recognized characters of typhlitis, the symptoms are almost invariably due to appendicitis. Exceedingly rare are the cases where the cause resides in the cæcum. Fitz records but three cases in which pericæcal abscess was caused by ulcerative perforation of the walls of the cæcum; and in each instance it was due to the presence of a foreign body. Pericæcal disease may, then, in most cases, be said to mean disease of the appendix vermiformis.

It seems hardly worth while to consider the conventional division of appendicitis into the catarrhal and ulcerative; for, clinically speaking, although an uncomplicated catarrhal condition may exist, there are no signs by which it can ordinarily be recognized.

Inflammation and perforation of the appendix in most cases, very probably in all cases, is due to irritation excited by the presence of a foreign body in the organ. It has been shown that the foreign substance is commonly a fecal or phosphatic concretion,

or an aggregation of small objects which from time to time have gained an entrance; or the concretion may be composed of epithelial or other constituents aggregated into a hard mass from the ordinary secretions of the parts.

No complete or fully satisfactory classification of the cases of inflammation, perforation and abscess of the appendix can probably at this time be made; but for practical purposes, a division according to the onset and history of the disease, into the acute and chronic varieties, will probably fulfil all necessary clinical requirements.

In the acute disease, the symptoms come on with suddenness and increase in severity, and often very early present the gravest characters. Occasionally the disease progresses from first to last with frightful rapidity, so much so that the patient quickly enters a condition bordering on collapse. In one case which recently came under my notice, the child perished with perforation and purulent peritonitis forty-eight hours after the first symptoms were observed.

Possibly such extremely acute cases as the one mentioned might afford an opportunity for still further division into the ordinary acute and the supra-acute, the latter running their course in a very short time, often in a few hours. An explanation of these forms will be given later, when considering the pathology of the subject.

Recently I saw in consultation a case which presented marked symptoms of perforative appendicitis. After the pus cavity was opened the patient became so profoundly exhausted that death seemed imminent and all further exploration had to be abandoned. Surgical interference in many cases is unfortunately so long postponed that a favorable result can hardly be expected.

The close proximity to the peritoneum of such fetid pus as is found in suppurative appendicitis produces very early unusual depression and exhaustion; so much so that occasionally anæsthesia and simple incision is sufficient quickly to give rise to symptoms indicating heart failure. In such cases any further exploration of the abscess cavity is impossible.

In the chronic forms of appendicitis, we have recurring attacks or relapses. Such repeated attacks of inflammation about the appendix region are often followed by a deposit of lymph which forms a barrier more or less complete, sufficient, when perforation takes place, to protect the peritoneal cavity at least for a time. But if operative measures are not undertaken or are unduly delayed, such lymph partitions

often yield, and the general peritoneal cavity becomes involved and peritonitis results.

In other cases the abscess walls form a distinct pus cavity which surrounds the organ, so that when perforation occurs, the contents of the abscess form a tumor, or more or less defined hardness. Such tumors frequently make their way toward the surface, and the superimposed structures become infiltrated and markedly oedematous. In such cases the perforation of the appendix may remain open and a fistula form between the bowel, the abscess cavity and the external abdominal surface.

In January, 1885, I saw a case of this character in consultation, in a lad 11 years of age, who had all the symptoms of perforation and abscess of the appendix. A tumor gradually developed and perforated the abdominal walls. Subsequently I made a free incision and evacuated a large amount of pus. The general condition of the patient at the time did not warrant a search for the appendix. The fistula never closed; the boy two years later perished from pulmonary tuberculosis. In any abscess of the ileo-cæcal region, we should always suspect appendix disease, and an effort should always be made to expose this organ. In no case should a simple evacuation of pus be considered sufficient, especially if the history of the case presented any account of former appendix trouble. A case of this character came under my care some two years ago, in which I simply evacuated an abscess situated in the ileo-cæcal region, and made no investigation of the appendix, as the abscess cavity seemed a closed one. Two years later I was obliged to make abdominal section and removed a diseased appendix, which undoubtedly existed at the time of the first operation.

L. A. B., a stout girl of healthy parentage, and with no family history of cæcal or appendicular disease, had a severe fall upon the buttocks in March, 1884. She was almost immediately seized with a terrible attack of vomiting and retching, which lasted hours. From this time until September, 1885, she suffered with extremely painful menstrual epochs, and from time to time, when tired, had a recurrence of vomiting similar to that immediately succeeding her fall. On September 10, during the progress of one of these vomiting spells, she experienced severe pains in the right cæcal region, the whole seizure lasting about ten days. Another attack developed on September 29, and still others on November 10 and 23. The latter was brought on by taking cold, and in five hours she was compelled to go to bed, and endured the most excruciating drawing pains, which radiated from the right cæcal region to the shoulder blade of the same side. Vomiting continued for some hours. Emesis then ceased, but the pains continued off and on until January 10, 1886, when I first saw the patient. A hardening was then present in the right ileo-cæcal region. Poultices and mercurial inunctions were ordered, which gave very marked relief. She daily seemed to improve, and before March 19 had resumed her household duties. On that date she was much overworked in caring for company, and about midnight was seized with torturing pains in the region of the hardening. These continued until

April 3, when I incised the now greatly enlarged mass, liberated a large quantity of fetid pus, and introduced a drain tube. There was apparently no communication with the cæcum or its appendix. The tube remained in for a long time, and the wound did not completely close until August. Her condition, however, had meanwhile improved amazingly, and she was soon quite herself again, being up and about the house in four weeks.

After this, especially when tired out or at a menstrual period, the patient suffered with pain localized about the cæcal region. The attacks resembled colic. Three months after operation she had quite a severe attack of local pain which lasted a number of hours. These attacks, at long intervals, presented about the same characteristics. The last occurred in January, 1888, which was accompanied by more severe pain than any of the others.

During the evening of Friday, March 15, she was taken with violent vomiting and purging. These symptoms continued all night, and through Saturday when the pain was most intense. On Sunday her symptoms appeared grave. Pain was increased on pressure in the right ileo-cæcal region. Abdomen soft, fever, rapid pulse and dry tongue. On Monday the symptoms continued the same, with a temperature of 102°. In the afternoon the general symptoms were more serious. No tumor could be felt, only increased pain. Skin was bathed with sweat. There was marked resonance over the part. On Tuesday the pulse was feeble, nausea and occasional sick stomach prevailed. The other symptoms remained about the same, when diagnosis of perforated appendix with abscess was made. The same morning she was etherized, and the usual lateral incision 5 inches long was made, which came about an inch further laterally than the line of incision of the first operation. The deep tissues of the abdominal wall were somewhat oedematous, and just before the peritoneum was reached, a large quantity of most fetid pus was liberated. At the base of this cavity was clearly visible the cæcum and appendix. The latter was enormously enlarged, thickly covered with lymph and abscess lining membrane. A considerable sized opening also communicated with the cavity of the general peritoneum, through which small intestines were forced when she coughed.

The appendix was firmly attached to the cæcum, from which it was separated with some difficulty. It was then firmly ligated with stout silk at its junction with the cæcum and excised. The communication with the general peritoneum was then dilated, and through it the intestines were most thoroughly washed by means of hot water irrigations. The abscess cavity proper and surrounding parts were sponged with 1:1,000 mercuric solution. A glass drain tube was then carried to the bottom of the pelvis and brought out through the lower angle of the wound, while a larger rubber tube occupied the line of the same and emerged at its upper extremity.

The incision was then closed and an antiseptic dressing applied. She reacted and continued to do well. Immense swelling of the wound occurred on the following day and necessitated the cutting of all

the stitches, whereupon the cæcum lay in full view at the bottom of the wound, but no prolapse of intestine at any time took place.

Great sloughs kept coming away for many days, also much pus, in spite of every effort to keep the wound aseptic. The deep glass or pelvic drain became dry on the fourth day and was removed on the fifth. From that time the wound was kept lightly packed with antiseptic material and rapidly granulated to the surface, when a few strips of rubber plaster were applied.

Patient's bowels, from time of operation, were kept in a freely moving condition by means of citrate of magnesia and enemata. In less than a month the patient was well, and has since been married. The appendix was found to be the seat of a very large perforating ulcer, situated near its cæcal attachment, but no foreign body was discovered.

The following case I saw in consultation with and operated upon for Dr. Ed. R. Stone, of Philadelphia:

Mrs. G., æt. 34, mother of one child, had been perfectly healthy up to time of last illness, save for occasional attacks of colic which had readily yielded to anodynes, and it was said that she had had a severe attack of pain and vomiting some months before. For two days previous to February 18, 1887, she severely exerted herself and menses were overdue. On that day she had severe abdominal pain accompanied by vomiting. The pain was described as starting in the right hypochondriac region and darting to the umbilicus. No tumor was perceptible, neither was there tenderness upon pressure. Anodynes and counter-irritation were ordered. February 19, pain less, no emesis nor rise of temperature; some soreness and tenderness to the right of the umbilicus. Pain returns as anodyne effects pass off. Bowels have not moved for several days. Abdomen somewhat tympanitic, tongue coated and hard at tip. Evening temperature 100°; pulse 90. Treatment continued.

February 20. Restless night. Vomits yellow material freely. Abdomen tympanitic and tender. T. 101°; pulse 110. Operation advised, but refused.

February 21. Symptoms continue. She is quieter but weaker. Abdomen very large and tender. On the morning of this day I saw her and, although her condition was very unfavorable, urged abdominal section as her only chance for life, as my diagnosis was perforated appendix and subsequent peritonitis.

A free incision was made laterally over the cæcal region, and the appendix found greatly enlarged and perforated in two places, both holes measuring a little more than $\frac{1}{4}$ inch in diameter. A silk ligature was placed upon the appendix close to the cæcum, and the offending organ then removed. There was also purulent peritonitis. The abdominal cavity was thoroughly irrigated, the region of abscess cleansed and a drain inserted. She died in a few hours.

The following case presents the prominent symptoms which are usually observed in cases of chronic suppurative appendicitis; and this patient has been benefited as much by the practical application of the principles of modern wound treatment as any human creature ever can be. He was a patient of Dr.

Frank Woodbury, with whom I saw him in consultation and who conducted the after-treatment.

Charles K., æt. 26 years, had enjoyed good health until three years ago. Since that time he had been subject to frequently recurring attacks of abdominal pain, which would come on without warning whilst he was apparently well, and completely prostrate him. The pain was of a stabbing character and most severe about the lower abdomen and umbilicus, and was attended with great tenesmus of rectum and irritability of bladder. These attacks, after lasting a few hours, would usually pass off, leaving him in a weak condition. During the periods between attacks he kept very well. The last seizure began about April 20 last (1887), when he consulted Dr. Woodbury. He was then haggard, sallow, and constipated; the tongue was heavily coated. Abdominal pain was much complained of. Urine contained much albumen and few casts. He was placed upon usual medicinal treatment, but steadily grew worse. Two days later his temperature rose to over 103, pain became very severe, there was much nausea and vomiting, and a distinct hardening, but no tumor could be felt in the right iliac region of the abdomen. These symptoms continued to augment until I saw him three days later, and determined that operation was his best and only chance. At the time of operation his condition was discouragingly wretched, that of a man in the dying stages of general purulent peritonitis. Nevertheless, operation was begun and carried to successful termination. The patient was stimulated and antiseptically cleansed. The incision was made laterally over the seat of induration. The latter had now become slightly prominent. An abscess cavity was entered at the depth of an inch below the abdominal surface, a free flow of pus took place and the cæcum and its diseased appendix came into view. A phosphatic concretion resembling a cherry stone was found alongside that organ, but entirely outside it, and evidently was the cause of the whole trouble. The vermiform appendix was greatly swollen and exhibited a perforating ulcer three-fourths around its circumference and very near to the point of its cæcal attachment. A silk ligature was applied close to its root and the remainder excised, together with a large portion of omentum which projected into the abscess cavity. The peritoneal cavity was then thoroughly washed out with warm water, for an opening into the general peritoneum was found, and through it the pus had passed into the cavity of the peritoneum. The abscess walls were then thoroughly curetted and, after a final wash, a rubber drain was carried to the bottom of the pelvis and the wound was partly closed. On the following day, drainage being imperfect, every stitch was removed, the wound gaped immensely, sloughs came away, healthy supuration was established and granulations appeared, and the wound promptly closed.

Convalescence was uninterrupted from this time; his temperature never again reached 100°, and he has enjoyed perfect health until the present time. The drain was removed piecemeal; the last portion not until sixteen days after operation.

In the following case the result was less fortunate:

On the 13th of last January, I was called in consultation to visit a child 9 years of age. It seemed that she had suffered from backache, and frequent attacks of pain in the abdomen. She attended school until just before Christmas, she then had a severe colicky attack, but subsequent to this was apparently quite well, and on December 31, was on her sled for several hours. On January 6th she was seized with sick stomach, abdominal pain, and had high fever; after this she was so much better that she was down stairs, and ate of sausage and rolls; soon after she was seized with violent abdominal cramps, the right iliac region being exceedingly painful. January 12, she had an attack of pain which was most excruciating in character. The following day when I first saw her, the condition was wretched, almost a collapse; but not to such an extent as to justify denial of her only chance of life, as I had diagnosed peritonitis originating in a perforated appendix and advised operation. Upon making a lateral incision, as soon as the peritoneum was opened a great flow of putrid pus took place, then the cæcum and appendix came into view; the latter was greatly swollen, and the cæcum and appendix were covered with greenish-yellow pyogenic membrane and lymph. The end of the appendix had sloughed off, and was gangrenous for some distance; one foreign body was found in the abscess cavity, another was partly held in the sloughing end of the organ, and two other concretions were in the canal near the cæcum. The appendix was ligated at its base and excised; the whole abdominal cavity and its intestinal contents which were in a state of purulent inflammation were thoroughly inundated with hot water; a tube was carried into the pelvis, and the wound was closed and dressed in the usual manner; the child never reacted fully, but died seven hours afterwards.

We may provisionally classify these cases of appendicular disease according to the pathological conditions which each case illustrates:

First, those cases where the appendix and its surroundings become encysted by deposit of lymph, so that a cavity more or less complete is formed, into which the contents of the appendix are received when perforation occurs, while the walls of the cavity afford possibly, a complete partition which separates it from the peritoneal cavity. These cases are likely to be chronic in their course.

Secondly, those cases where an insufficient limiting lymph partition wall has been formed, and where the general peritoneum promptly becomes involved. Thirdly, where appendicular ulceration and perforation has been so rapid that sufficient lymph for the production of a partition wall has not been thrown out. This group furnishes the acute cases.

SYMPTOMS.

The earliest symptoms of appendix inflammation or irritation are commonly pain in or about the cæcal region, which is often paroxysmal in character. The pain is increased by pressure. There is nausea and vomiting. Constipation is commonly present. The urine is frequently scanty, or it may be nearly suppressed.

These symptoms may sooner or later disappear with apparently full convalescence. A relapse or recurrence of symptoms demonstrates that an irritation still remains. The attacks recur at variable periods, and perhaps with graver symptoms, or during any such attack the sudden advent of violent local and constitutional symptoms definitely announces the occurrence of perforation of the appendix.

If perforation occurs after many such recurring attacks, the pericæcal inflammation has usually been sufficient to secure a protecting medium between the diseased tissues and the general peritoneum; and when perforation occurs, there is less danger of peritoneal involvement. As suppuration increases, a tumor is formed, which may work its way forward to the surface in its course gradually infiltrating the abdominal muscles and dissecting the tissues before it. At this period there is usually considerable oedema, and as the abscess approaches the surface, the skin becomes red and discolored. Occasionally, however, the pus does not take such a favorable course, but may point in the bladder, bowel, hip-joint or other unusual position. The presence of pus close to the peritoneum is always attended by very marked, sometimes profound depression of the vital powers. The patient experiences chilly sensations, if not actual rigors. The temperature is elevated. At the same time there is more or less general sweating. Later on, a fullness may be felt about the ileo-cæcal region; but until a circumscribed pus tumor has formed, the ileo-cæcal region continues to be resonant, indeed, it is often unusually tympanitic, so that before the pus tumor can be felt, the presence of suppuration in this locality must be determined by the history of the case, and the same general rules by which pus is recognized in other localities.

It is probable that in many instances, attacks of colic, so called, are simply contractions of the appendix incident to nature's efforts to expel foreign bodies from this organ. To show how common it is for the appendix to harbor foreign bodies, I may state that in thirteen consecutive post-mortems made recently at the Pennsylvania Hospital, in persons who had died from other than intestinal disease, the appendix in every instance but one contained fecal concretions. In a number the foreign bodies were quite soft; others were firm, while others were gritty in character. In several cases, the appendix was blocked up by foreign bodies for an inch or more. No doubt such material may become imprisoned, and if not dislodged and thrown into the intestine, may excite appendicitis, ulceration and perforation. Indeed, that such is the usual history, is now well recognized.

Actual perforation of the appendix is generally ushered in by intense excruciating, agonizing pain, which is somewhat relieved by the occurrence of the accident.

Twice I have known instances where two children in the same family perished from perforation of the appendix; this experience may simply be a coincidence, but it would seem possible that stenosis of the outlet of this organ may prove to be occasionally a hereditary condition.

TREATMENT.

THE OPERATION.

For practical purposes, the treatment of pericæcal inflammation must be divided into two subdivisions; that of the pre-purulent and that of the post purulent or suppurative stage; or first, before the formation of pus, or of appendix perforation, and second after that event.

The treatment of the pre-purulent, irritative or simply inflammatory disorders of the cæcum and its surroundings, should consist of rest in bed, restriction of diet to nourishing liquids, hot poultices or fomentations frequently replaced upon the parts, perhaps local depletion, and the hypodermic exhibition of morphia to control pain. The bowels should be kept open and free from the accumulation of gas or feces by the administration of saline laxatives and enemias; perhaps with the addition of turpentine to the latter.

Pain of intense character, would often be as much an indication for operative relief as for morphia.

Prompt resolution should take place in cases which are not to go on to the stage of pus formation, and very long continuation of symptoms or relapses or recurrences would be strong indications for surgical interference.

The presence of such tedious recovery, relapse or recurrence, would point to the probable presence of conditions exceedingly dangerous to the patient, from liability to general peritonitis or perforation at any time. They would further point, as a rule, to the appendix as the source of irritation and danger; indeed, in man, that worse than useless appendage must be regarded as the root of most evil in the region under consideration.

Where the process has reached the suppurative stage, and this condition has been recognized, the course to be pursued is, indeed, very plain. Even a small amount of pus lying near the peritoneum is vastly more of a risk than an abdominal section performed for its removal. Hence, I should operate whenever the diagnosis of pus has been made, occasionally even without positive diagnosis—indeed, without qualification, I repeat, that pus being present in the region of the cæcum, operation is positively indicated.

Many other risks are to be taken rather than those of purulent peritonitis, for early interference will save most, if not nearly all, cases from this latter dread complication; while the danger of operation becomes slight compared to that of rampant abdominal inflammation.

Local or general peritonitis supervening in a person who has a history of cæcal trouble or starting during a first attack would more than justify operation.

At a later stage of the disorder, all available diagnostic skill must be exerted to detect a pericæcal abscess, should it point in an anomalous situation. We must ever, however, bear in mind the surgical rule always to attack pus at its source if possible. When the cæcum is normally placed, this is always feasible if the disease be recognized.

On account of the nature of the case, there is little time for special preparatory treatment for the operation. The surroundings of the patient should correspond with the usual requirement for abdominal operations. Asepsis should be rigidly observed in every particular.

The aspirating or exploring needle should never be used for diagnostic purposes; for if it does not find pus, we cannot be sure that none is present, while its own dangers are not inconsiderable. In these cases it is a dangerous and especially unsafe diagnostic resource.

Having the patient supine and extended, the field of operation is to be thoroughly cleansed, shaved, and washed with a bi-chloride solution 1:1000 and finally with ether. Towels wrung out of the mercuric solution are placed to protect the field of operation.

The line of abdominal incision should be slightly oblique or vertical, not median but lateral.

The advantages of the lateral incision are very obvious and positive. If median, the peritoneal cavity would often be opened needlessly, and at a point far remote from the cæcum and appendix, and in a position in which the cæcum and appendix cannot well be reached or dealt with. The lateral incision can be made of less size and directly over the appendix and abscess cavity. Moreover, in this situation, small circumscribed or secondary abscesses in the abdominal wall, which are sometimes come upon, can be evacuated before the peritoneum is reached, and at its base all necessary manipulations can be made in many cases without opening the general peritoneal cavity at all; while, should the suppuration have extended in this direction, the intestines can just as well be examined and cleansed through a lateral as through a median incision. Should there be subsequent sloughing of tissue, as frequently occurs, the sloughs can be far more readily discharged through an opening immediately over the locality of the disease than if it were situated elsewhere; while drainage can be much more thoroughly accomplished by a lateral incision. The length of the incision depends upon the conditions found after the abscess cavity is reached: an incision three or four inches in length will often be sufficient for the removal of the appendix; but in case there is a large abscess cavity it can be increased to any desired extent.

The favored or lateral incision should begin at a point about an inch above the middle of Poupart's ligament and to the outer side of the right linea semilunaris, to be continued from this point upwards in a vertical direction, or outward and upward, and carried down until pus, cæcum or peritoneum shall be reached. From numerous dissections, made with a view to determine the ordinary position of the appendix vermiformis, I have found that this organ is normally placed immediately under a point two inches distant from the right anterior superior iliac spinous process, on a horizontal line drawn from this process towards the median line of the body.

When the abscess cavity is reached, gas is usually first discharged. The wound can then be enlarged if necessary, in order to fully expose the cavity underneath. Irrigation with boiled water at a temperature of 105° or 110° , and careful sponging, now permits a clear view to be had of the surroundings of the cæcum, and its appendix. The latter is usually found to be the seat of trouble. It would be well to excise it in any case, whilst we have the chance; for any cæcal trouble would be likely, in time, to excite disorder in its appendage. Without a doubt it should be so treated, if found inflamed, perforated or harboring foreign bodies. This can best be accomplished by ligating it as close as possible to its cæcal attachment with a strong silk thread, and then cutting it off beyond the ligature. Cæcal perforations if found, should be cleaned and curetted, and then closed by Lembert's suture; even ulcers which have not perforated might by the same means be turned into the bowel lumen. If the general peritoneal cavity has not been involved the walls of the abscess should be gently curetted, washed with a mercuric solution 1:1000, and a large drain carried to the bottom of the wound and brought out at its most dependent part. The external wound should, with the exception of a suture or two, be left thoroughly open, and lightly filled with an antiseptic dressing. A rope of absorbent cotton should be placed in the glass tube, a large mass of cotton should cover the abdominal and wound surface. A four tailed flannel bandage completes the dressing.

The question of using Lembert's suture after amputating appendix, as has been suggested, is of no practical importance. The constricted or tied portion which is very close to the cæcum must close by granulation; indeed, the situation is very similar to that existing when Fallopiian tubes are ligatured and removed for suppurative salpingitis. No one would think of using a Lembert suture in such a case. Moreover, I have found it impossible to employ such sutures after appendix excision; because the tissues being oedematous, infiltrated and friable, will not permit it. The attempt to approximate them only causes the threads to tear through. Cæcal perforations are different. As already said, the attempt should be made to close such with Lembert's suture if possible; but even here the gut can be lifted up by tenacula and perforation obliterated by a silk ligature.

If the general peritoneum has become involved, the whole abdominal cavity must be thoroughly washed out with hot distilled water, temperature 105° to 110° F., or bichloride of mercury solution 1:10,000. The intestines should be cleansed with sponges and the foreign body, if that has been the source of the perforation, searched for. Should peritonitis be far advanced, the intestines must be withdrawn and all adhesions parted with a finger or a knife. During the process of cleansing, and before they are returned to the peritoneal cavity, they should be thoroughly protected with towels wrung out of hot water. In all cases of general peritonitis a glass drainage tube must be carried to the bottom of the pelvis and kept in working order by means of ropes of absorbent cotton which act by capillarity. In some cases it

may be well to use a second tube of rubber for the more superficial or pericæcal cavity; but if the wound is treated by the open method, this second tube can be dispensed with.

Should the cause of the morbid process be impaction of feces or a foreign body in the cæcum itself, they must either be excised, or urged by prudent force along the bowel. In their operative removal a simple incision, afterwards brought together by Lembert sutures, would answer every purpose. If portions of the cæcum have sloughed and the breaches of continuity are too large to approximate with Lembert sutures without producing dangerous constriction of the gut we must be content with the formation of an artificial anus. Recent experience in cases of appendix abscess has led me to the above conclusion that the abdominal wound should never be closed, except perhaps in the simplest cases, where no pyogenic membrane exists. Where there is any degree of suppuration, sloughing or pyogenic tissue, the abdominal wound is certainly best treated by the open method. By this I mean that, with the exception of one or two points of suture, or perhaps no sutures at all, the wound is allowed to remain open, so as to favor granulation from the bottom of the cavity, and thus to afford free vent to pus and the results of destructive inflammation. Doubtless the cæcum will be exposed, but it will not protrude, and need not lead us to anticipate the slightest difficulty. This portion of the bowel is in a comparatively fixed position and will always afford a barrier to the protrusion of the small intestines. After the wound has granulated to the surface if there is any disposition in it to gape it can be readily approximated and held in position by strips of rubber plaster. The same general principles of treatment will hold even for those rare cases of displacement of the cæcum as into scrotal and other hernia, its abdominal transposition, etc. The important question in these cases will be the diagnosis.

It can properly be said that there is no fixed rule for the time of operation in cases of abscess of the ileo cæcal region. All I can say in summing up the subject is that when symptoms strongly suggestive of the presence of pus are seen, it is far safer to operate at once than to wait. Procrastination in such cases really means even more than surgical uncertainty. This uncertainty can be set aside only by an exploratory incision. Delay is productive of the gravest consequences to the patient, the prognosis growing worse every hour that the operation is postponed.

AFTER TREATMENT.

Immediately after the operation a hypodermic injection of morphia may be required to relieve pain or check vomiting or restlessness. The ordinary rules of abdominal surgery are observed. The cotton rope should be changed in the tube every few hours. Before it is replaced the tube should be irrigated with a weak carbolio acid or other antiseptic, especially where, as is often the case, the secretions are offensive in character. If the wound is left open there will generally be no need of a second or superficial drainage tube, as the discharges will be at once

absorbed into the superimposed dressings. The time for the removal of the glass drain from the pelvis will depend altogether upon the subsidence and character of the secretion. Frequently the tube is gradually forced out by the action of the intestines themselves and at the proper time. The abscess cavity should be treated exactly as such foul abscess cavities would be treated in any other part of the body. The closure of such a putrefying tract would only add to the danger of the patient without a single compensating advantage.

The bowels should be kept in a soluble condition by salines; threatened peritonitis should be met by active purgation by salines; milk should be given in small doses and at short intervals, and stimulants are generally required. Where there has been much exhaustion and considerable suppuration champagne should be administered *ad libitum*.

Typhoid or tubercular caecal, or appendicular inflammation or perforation likewise should receive identical treatment as for the simple inflammatory disorders of that region. This whole subject is still in its infancy, so far as the majority of the profession are concerned, but it is of almost boundless promise.

REPORT ON INTUBATION.

Read in Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May 10, 1888.

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Intubation of the larynx while not perhaps fulfilling the expectations of some has, nevertheless, within the past year gradually grown in favor and more extended experience has proven the full value of this procedure. An occasional physician has met with such signal failure as to disparage the operation and to abandon it. The same however may be said of tracheotomy, and it is no argument against the operation.

As the full value of an operation can be determined only by a careful investigation of the results in quite a number of cases, I here present a record of my first 150 operations,¹ and although this number is not large it is sufficient to fairly demonstrate that intubation of the larynx possesses nearly, if not quite all the advantages claimed for it. In none of the following cases has the operation been performed until severe and increasing dyspnea has demanded surgical interference. In a few instances where I have been called in consultation I have declined to operate believing that the patients would recover without it. Frequently I have delayed operating during my first visit but being subsequently called found it necessary to do so in order to further prolong the life of the patient. In the great majority of cases I was called in consultation with other physicians and the operations performed as a last resort, after all other modes of treatment (excepting tracheotomy) had been found useless and the patients practically given up to die.

In the *New York Medical Record*, of Oct. 29, 1887, Dr. O'Dwyer reports 50 cases, with 12 recoveries, and in the *New York Medical Journal*, of Jan. 14, 1888, an additional 50, with 15 recoveries, making a total of 100 cases, with 27 recoveries, or 27 per cent.

I have within the past year collected, by inquiry and by letter, as well as from published reports, records of 1072 operations performed in various parts of the United States, with 287 recoveries, or 26.77 per cent. In 661 cases the ages were given and were as follows:

No. of Cases.	Age.	Recoveries.	Percentage.
31	Under 1 yr.	5	16.12
97	1 year.	15	15.46
149	2 years.	29	19.46
140	3 "	42	30.00
98	4 "	32	32.65
56	5 "	19	33.92
27	6 "	10	37.03
32	7 "	16	50.00
12	8 "	5	41.66
10	9 "	5	50.00
2	10 "	1	50.00
5	11 "	2	40.00
2	14 "	0	00.00
Total, 661		181	27.38

The most unpleasant feature of intubation has been the inability of the patient to swallow liquids. Solids and semisolids frequently have not been relished or properly digested, and the craving for water has often been so great that parents have sometimes regretted the operation and have blamed the physician for prolonging life and adding an additional cause of suffering. It is undoubtedly true that the falling of fluids and solids through the tube and into the bronchi is frequently the cause of broncho-pneumonia. I have long been at work endeavoring to devise some means of covering the upper opening of the tube during deglutition, and thus overcoming this objectionable feature of intubation. The first device for this purpose was the rubber epiglottis exhibited to this Society one year ago. While this arrangement was satisfactory in many cases yet in others it would often fail on account of becoming disarranged during the introduction of the tube or later from coughing. After much thought and many experiments a metal epiglottis was devised as a substitute. This metal epiglottis is controlled by a spring of gold wire inclosed in the hinge at the upper end of the tube. As the patient swallows, the metal cap is pressed down over the opening of the tube and solids and fluids are prevented from passing into it. To prevent sudden suffocation in case any accident should occur to the spring, a slot is made in each side of the head of the tube and near the rim. I have used this device with great satisfaction, and the ability to swallow liquids is particularly noticeable in the older children. They

¹ See pages 740, 741.

Case.	Age.	Date.	In Consultation with—	Termination.	Cause of Death.	Length of time tube was worn.	Time d'th occurred after operation.	Diphtheritic Symptoms.	Membrane.
12 yrs. 1 mo.	Apr. 12, 1885.	In my own practice...	Fatal...	Extension of membrane to bronchi.	24 hours.	36 hours.	Mild.	Present in larynx.	
23 years.	Apr. 23, "	In my own practice...	"	Extension of membrane to bronchi.	30 hours.	36 "	"	" " "	
316 months.	July 16, "	Drs. Hatfield & Casselberry.	"	Extension of mem. and exhaustion.	24 hours.	26 "	Severe.	" " phar. and lar.	
45 years.	Sept. 15, "	Dr. Behrend.	Recovery.	"	6 days.	"	Mild.	" " larynx.	
42 yrs. 7 mos.	Sept. 24, "	Dr. Richardson.	Fatal.	Pneumonia.	6 days.	6 days.	Severe.	In phar., lar. and trachea.	
620 months.	Nov. 3, "	Drs. Appleby & Dahlberg.	Recovery	"	4 days.	"	Mild.	In larynx.	
74 years.	Nov. 9, "	Drs. Rosworth and Nelson.	Fatal.	Exhaustion.	48 hours.	48 hours.	Malignant.	In pharynx and larynx.	
83 years.	Nov. 16, "	Dr. Kossakowski.	"	Extension of mem.	30 hours.	30 "	Mild.	" " "	
102 yrs. 2 mos.	Nov. 13, "	Dr. Kossakowski.	Recovery.	"	14 days.	"	"	" " "	
102 years.	Nov. 20, "	Drs. Hatfield & Casselberry.	Fatal.	Pneumonia.	50 hours.	50 hours.	"	" " "	
115 years.	Nov. 21, "	Dr. Valm.	Recovery	"	5 days.	"	"	" " "	
125 years.	Dec. 2, "	Drs. Caldwell and Ogden.	"	"	4 days.	"	Severe, following measles	" " "	
133 years.	Nov. 30, "	Dr. Holroyd.	Fatal.	Extension of membrane to bronchi.	36 hours.	36 hours.	Severe.	" " "	
144 years.	Dec. 3, "	Dr. Dahlberg.	Recovery.	"	4 days.	"	Mild.	" " "	
154 years.	Dec. 6, "	In my own practice...	"	"	3 days.	"	"	" " "	
163 years.	Dec. 11, "	Dr. Pierpont, of Englewood.	Fatal.	Pneumonia.	48 hours.	48 hours.	Severe.	In nares, phar. and larynx.	
174 yrs. 9 mos.	Jan. 4, 1886.	Drs. Quine & Willard.	Recovery.	"	3 days.	"	Absent.	In larynx.	
183 years.	Jan. 9, "	Dr. Miller, of Kensington.	Fatal.	Exhaustion.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
192 years.	Jan. 12, "	Dr. C. E. Caldwell.	"	Extension of membrane to bronchi.	24 hours.	24 "	"	" " "	
204 years.	Jan. 13, "	Dr. C. E. Caldwell.	"	Pneumonia.	36 hours.	36 "	"	" " "	
217 years.	Jan. 22, "	Dr. C. Caldwell.	"	Extension of membrane to bronchi.	48 hours.	48 "	"	" " "	
223 years.	Jan. 25, "	Dr. Dahlberg.	"	Exhaustion.	48 hours.	48 "	Mild.	" " "	
232 yrs. 2 mos.	Jan. 26, "	Dr. Hyas.	"	Diphtherit. toxæmia.	24 hours.	24 "	Malignant.	" " "	
2414 months.	Jan. 28, "	Dr. Berry.	"	Pneumonia.	48 hours.	48 "	Severe.	" " "	
2511 months.	Jan. 28, "	Dr. C. E. Caldwell.	"	Exhaustion.	24 hours.	24 "	"	In nares, phar. and lar.	
2613 months.	Feb. 6, "	In my own practice...	"	"	24 hours.	24 "	Severe.	In pharynx and larynx.	
274 years.	March 1, "	Dr. Steele.	"	Pneumonia.	48 hours.	48 "	"	" " "	
287 years.	March 5, "	Dr. McGinnis, of Brighton.	"	Extension to bronchi.	60 hours.	60 "	"	" " "	
292 years.	March 6, "	Dr. Headley.	Recovery.	"	7 days.	"	Mild.	" " "	
308 years.	March 8, "	Drs. Kippax & Adams.	Fatal.	Extension to bronchi.	48 hours.	72 hours.	Severe.	" " "	
312 years.	March 9, "	Dr. R. L. Rea.	"	"	24 hours.	24 "	"	" " "	
332 years.	March 11, "	Dr. Behrend.	"	Pneumonia.	48 hours.	48 "	"	" " "	
339 months.	March 13, "	In my own practice...	"	Exhaustion.	72 hours.	88 "	"	" " "	
3417 months.	March 15, "	Dr. Wm E. Hall.	"	"	24 hours.	24 "	"	" " "	
357 years.	March 25, "	Dr. Van Dooser.	"	Suffocation from detachment of membrane after removal of tube.	24 hours.	24 "	Mild.	" " "	
364 years.	March 27, "	Dr. Chas. E. Caldwell.	"	Extension of membrane to bronchi.	36 hours.	36 "	Severe.	" " "	
377 years.	March 29, "	Dr. McWilliams.	Recovery	"	36 hours.	36 "	Mild.	" " "	
387 years.	March 31, "	Dr. Parsons.	Fatal.	Extension of membrane to bronchi.	72 hours.	72 hours.	"	" " "	
392 years.	April 25, "	Drs. Fenger & Storck.	"	Extension to bronchi.	48 hours.	48 "	"	" " "	
402 years.	April 28, "	Dr. Lawless.	"	Suffocation after ejection of tube.	24 hours.	24 "	"	" " "	
418 years.	April 29, "	Dr. Tillotson.	Recovery	"	2 days.	"	Severe.	" " "	
423 years.	May 3, "	Dr. Berry.	Fatal.	Pneumonia.	48 hours.	48 hours.	"	" " "	
4314 months.	May 5, "	Drs. Steele & Lawless.	Recovery	"	86 hours.	86 hours.	"	" " "	
442 years.	May 6, "	Dr. Clendenning.	Fatal.	Extension to bronchi.	72 hours.	80 hours.	"	" " "	
453 years.	May 10, "	Dr. D. Collins.	Recovery	"	5 days.	"	" following scarlet fever.	" " "	
463 years.	May 16, "	Dr. Tillotson.	"	"	6 days.	"	Mild.	" " "	
4714 months.	May 20, "	Dr. Tillotson.	Fatal.	Uremic convulsions.	48 hours.	48 hours.	Severe.	" " "	
48 "	May 22, "	Drs. Johnson and Mannheimer.	"	Heart failure.	24 hours.	24 "	"	In phar., lar. and bronchi.	
493 years.	May 26, "	Dr. McDonald.	"	Diphtherit. toxæmia.	3 days.	5 days.	"	In pharynx and larynx.	
503 years.	May 27, "	Drs. Johnson and Mannheimer.	"	Exhaustion.	12 hours.	12 hours.	"	In nares, phar. and lar.	
517 years.	June 5, "	Drs. J. H. Hollister and Goodall.	"	Heart failure.	16 hours.	16 "	"	In pharynx and larynx.	
522 years.	June 9, "	Dr. Clendenning.	"	Exhaustion.	12 days.	12 days.	Mild.	" " "	
534 years.	June 9, "	Drs. Bogue and Shepherd.	Recovery fr. croup.	Nephritis.	4 days.	2 weeks.	Severe.	" " "	
5410 months.	June 11, "	Dr. Burbank.	Fatal.	Exhaustion.	24 hours.	24 hours.	"	" " "	
557 years.	July 14, "	Dr. Thomas.	Recovery.	"	4 days.	"	Mild.	" " "	
569 months.	July 27, "	Dr. J. V. Bacon.	Fatal.	Exhaustion.	24 hours.	24 hours.	Severe.	" " "	
572 years.	Aug. 16, "	In my own practice...	"	Extension to bronchi.	5 days.	5 days.	"	" " "	
589 years.	Aug. 13, "	Dr. McArthur, of Winona, Minn.	Recovery	"	12 hours.	"	Absent.	In larynx.	
599 months.	Sept. 2, "	Dr. Bates.	"	"	4 days.	"	Well marked.	In pharynx and larynx.	
604 years.	Sept. 12, "	Dr. Stearns.	Fatal.	Extension to bronchi.	3 "	3 days.	"	" " "	
612 years.	Sept. 27, "	Dr. Steele.	Recovery	"	4 "	"	"	" " "	
6223 months.	Sept. 29, "	Dr. Steele.	Fatal.	Extension to bronchi.	2 "	2 days.	"	" " "	
635 years.	Sept. 29, "	In my own practice...	Recovery.	"	3 "	"	"	" " "	
644 years.	Oct. 1, "	Dr. Tallman, So. Englewood.	Fatal.	Pneumonia.	3 "	3 days.	"	" " "	
654 years.	Oct. 7, "	In my own practice...	"	Extension of mem.	3 "	3 "	"	" " "	
664 years.	Oct. 19, "	Drs. Amrick and Dal.	Recovery	"	4 "	"	"	" " "	
673 years.	Oct. 13, "	Dr. Farlow.	Fatal.	Extension to bronchi.	8 hours.	8 hours.	Severe.	In phar., lar. and bronchi.	
684 yrs. 1 mo.	Oct. 1, "	Dr. I. G. Berry.	Recovery	"	4 days.	"	Well marked.	In pharynx and larynx.	

Case.	Age.	Date.	In Intubation with	Termination.	Cause of Death.	Length of time in operation.	Time of recovery after operation.	Diagnosis.	Remarks.
677 years.	Oct. 26, 1887.	Dr. Talbot.	Fatal.	Pneumonia.	2 days.	4 days.	Severe.	In pharynx and larynx.	
703 years.	Oct. 21, "	Dr. Steele & Riley.	Fatal.	Extension to bronchi.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
712 yrs. 10 mos.	Oct. 21, "	Dr. Steele & Riley.	Fatal.	Extension to bronchi.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
722 yrs. 3 mos.	Oct. 31, "	Dr. Steele & Riley.	Fatal.	Extension to bronchi.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
733 years.	Nov. 6, "	Dr. Steele & Riley.	Fatal.	Pneumonia.	2 days.	2 days.	Severe.	In pharynx and larynx.	
7413 months.	Nov. 11, "	Dr. C. W. Earle.	Fatal.	Exhaustion.	12 hours.	12 hours.	Severe.	In pharynx and larynx.	
7510 years.	Nov. 13, "	Dr. Webb & Lachner.	Fatal.	Heart failure.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
763 years.	Nov. 13, "	Dr. Lachner.	Fatal.	Broncho-pneumonia.	2 days.	3 days.	Severe.	In pharynx and larynx.	
776 years.	Nov. 17, "	Dr. Lachner.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx and larynx.	
786 years.	Nov. 19, "	Dr. Roy, of Auburn.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx and larynx.	
794 years.	Nov. 24, "	Dr. Bates and Mullenger.	Recovery.	Extension to bronchi.	2 days.	2 days.	Well marked.	In pharynx and larynx.	
803 years.	Nov. 29, "	Dr. A. B. ...	Fatal.	Extension to bronchi.	2 days.	2 days.	Severe.	In pharynx and larynx.	
8118 months.	Dec. 1, "	Dr. Barlow.	Fatal.	Extension to bronchi.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
826 years.	Dec. 1, "	Dr. Barlow.	Fatal.	Exhaustion.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
834 years.	Dec. 2, "	Dr. Barlow.	Fatal.	Broncho-pneumonia.	2 days.	2 days.	Severe.	In pharynx and larynx.	
844 years.	Dec. 6, "	Dr. C. F. Caldwell.	Fatal.	Pneumonia.	2 days.	2 days.	Severe.	In pharynx and larynx.	
854 years.	Dec. 20, "	Dr. J. G. Berry.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx and larynx.	
864 years.	Dec. 22, "	Dr. Larkin, S. Chicago.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx and larynx.	
874 years.	Dec. 29, "	Dr. J. G. Berry.	Recovery.	Extension of membr.	2 days.	2 days.	Well marked.	In pharynx and larynx.	
886 years.	Jan. 2, 1887.	Dr. Bangs.	Fatal.	Extension to bronchi.	2 days.	2 days.	Severe.	In pharynx and larynx.	
894 years.	Jan. 17, "	In my own practice.	Fatal.	Extension to bronchi.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
904 years.	Jan. 20, "	Dr. Barry.	Recovery.	Extension to bronchi.	3 days.	3 days.	Well marked.	In pharynx and larynx.	
9118 months.	Jan. 20, "	Dr. J. G. Berry.	Fatal.	Extension to bronchi.	2 days.	2 days.	Severe.	In pharynx and larynx.	
924 years.	Jan. 27, "	Dr. Barry.	Fatal.	Extension of membr.	3 days.	3 days.	Severe.	In pharynx and larynx.	
936 years.	Feb. 4, "	Dr. Mitchell & Gar- chell.	Recovery.	Extension of membr.	3 days.	3 days.	Absent.	In larynx.	
944 years.	Feb. 7, "	Dr. Quine.	Fatal.	Broncho-pneumonia.	2 hours.	28 hours.	Severe.	In pharynx.	
954 years.	Feb. 22, "	Dr. McDonald.	Fatal.	Diphtheritic toxemia.	4 days.	4 days.	Severe.	In pharynx.	
964 years.	Feb. 25, "	Dr. McDonald.	Recovery.	Extension to bronchi.	24 hours.	24 hours.	Severe.	In pharynx.	
972 years.	Feb. 26, "	Dr. M. Donald.	Fatal.	Exhaustion.	24 hours.	24 hours.	Severe.	In pharynx.	
982 years.	March 1, "	Dr. McDonald.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx.	
994 years.	Mar. 19, "	Dr. Barry.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx.	
1003 years.	April 13, "	Dr. Leavitt.	Fatal.	Diphtheritic toxemia.	2 days.	2 days.	Severe.	In pharynx.	
1012 years.	April 19, "	Dr. Leavitt.	Fatal.	Diphtheritic toxemia.	2 days.	2 days.	Severe.	In pharynx.	
1023 years.	April 30, "	In my own practice.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx.	
1033 years.	May 10, "	Dr. Kauffman, of Blue Island.	Fatal.	Extension of membr.	3 days.	3 days.	Severe.	In pharynx.	
1044 years.	May 11, "	In my own practice.	Fatal.	Extension of membr.	3 days.	3 days.	Severe.	In pharynx.	
1053 years.	May 24, "	Dr. Barry.	Fatal.	Extension of membr.	3 days.	3 days.	Severe.	In pharynx.	
1069 years.	June 7, "	Dr. Leavitt.	Recovery.	Extension of membr.	4 days.	4 days.	Severe.	In pharynx.	
1074 years.	June 17, "	Dr. Marr.	Fatal.	Exhaustion.	4 days.	4 days.	Severe.	In pharynx.	
1084 years.	June 21, "	Dr. Keeler.	Fatal.	Exhaustion.	2 hours.	2 hours.	Very severe.	In pharynx.	
1098 months.	July 14, "	Dr. E. M. Hale.	Recovery.	Extension of membr.	4 days.	4 days.	Severe.	In pharynx.	
1104 years.	July 14, "	Dr. DeWolf, of En- glewood.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx.	
1118 months.	July 31, "	Dr. Leavitt.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx.	
1126 years.	Aug. 8, "	Dr. Leavitt.	Fatal.	Bronchial invasion.	12 hours.	12 hours.	Severe.	In pharynx and larynx.	
1132 years.	Aug. 11, "	Dr. Sturmgel.	Fatal.	Exhaustion.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	
1143 years.	Aug. 15, "	Dr. Leavitt.	Fatal.	Bronchial invasion.	2 days.	2 days.	Severe.	In pharynx and larynx.	
1153 years.	Aug. 22, "	Dr. Price.	Recovery.	Extension of membr.	4 days.	4 days.	Very severe.	In pharynx and larynx.	
1162 years.	Sept. 14, "	Dr. Burr.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx and larynx.	
1174 years.	Sept. 16, "	Dr. Kossakowski.	Fatal.	Detachment of membr.	2 days.	2 days.	Severe.	In pharynx and larynx.	
11824 months.	Sept. 24, "	Dr. Steele & Steele.	Recovery.	Extension of membr.	6 days.	6 days.	Absent.	In larynx.	
1193 years.	Sept. 24, "	Dr. J. G. Berry.	Fatal.	Extension of membr.	6 days.	6 days.	Severe.	In larynx.	
1206 years.	Sept. 25, "	Dr. Smith.	Fatal.	Exhaustion.	4 days.	4 days.	Very severe.	In pharynx and larynx.	
1214 years.	Oct. 2, "	Dr. Holman.	Recovery.	Extension of membr.	3 days.	3 days.	Severe.	In pharynx and larynx.	
1222 months.	Oct. 5, "	Dr. Holman.	Fatal.	Extension of membr.	3 days.	3 days.	Severe.	In pharynx and larynx.	
1237 years.	Oct. 7, "	Dr. Thomas.	Recovery.	Extension of membr.	3 days.	3 days.	Severe.	In pharynx and larynx.	
1245 years.	Oct. 10, "	Dr. McCarthy.	Fatal.	Exhaustion.	3 days.	3 days.	Absent.	In larynx.	
1257 years.	Oct. 21, "	Dr. McCarthy.	Fatal.	Exhaustion.	36 hours.	36 hours.	Very severe.	In pharynx and larynx.	
1266 years.	Oct. 21, "	Dr. Coak.	Fatal.	Detachment of membr.	6 days.	6 days.	Absent.	In larynx.	
1276 years.	Oct. 23, "	Dr. J. G. Berry.	Fatal.	Exhaustion.	4 days.	4 days.	Mild.	In pharynx and larynx.	
1284 years.	Oct. 25, "	Dr. Leavitt.	Fatal.	Extension of membr.	6 days.	6 days.	Severe.	In pharynx and larynx.	
1294 years.	Nov. 2, "	Dr. Casely.	Fatal.	Exhaustion.	3 days.	3 days.	Very severe.	In pharynx and larynx.	
1303 years.	Nov. 7, "	Dr. Nelson.	Recovery.	Capillary bronchitis.	6 days.	23 days.	Mild.	In pharynx and larynx.	
1312 years.	Nov. 24, "	Dr. Church.	Fatal.	Extension of membr.	6 hours.	6 hours.	Severe.	In pharynx and larynx.	
1321 years.	Nov. 24, "	Dr. Dahlburg.	Fatal.	Bronchial invasion.	6 days.	6 days.	Well marked.	In pharynx and larynx.	
1334 years.	Dec. 4, "	Dr. S. and E. S. and Mannheimer.	Recovery.	Extension of membr.	3 days.	3 days.	Severe.	In pharynx and larynx.	
1342 years.	Dec. 7, "	Dr. Steele and Bab- cock.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx and larynx.	
13513 years.	Dec. 8, "	Dr. Merkle.	Fatal.	Diphtheritic toxemia.	2 days.	2 days.	Very severe.	In pharynx and larynx.	
1369 years.	Dec. 13, "	Dr. Riley.	Fatal.	Diphtheritic toxemia.	2 days.	2 days.	Malignant.	In pharynx and larynx.	
1373 years.	Dec. 26, "	Dr. Casely.	Fatal.	Extension of membr.	2 days.	2 days.	Severe.	In pharynx and larynx.	
1383 years.	Dec. 27, "	Dr. Gatchell & Mil- liff.	Fatal.	Extension of membr.	3 days.	3 days.	Mild.	In pharynx and larynx.	
1392 years.	Dec. 28, "	Dr. Greener.	Fatal.	Capillary bronchitis.	24 hours.	24 hours.	Well marked.	In pharynx and larynx.	
14010 years.	Dec. 31, "	Dr. Siles.	Fatal.	Diphtheritic toxemia.	2 days.	2 days.	Malignant.	In pharynx and larynx.	
1413 years.	Jan. 1, 1888.	Dr. Siles.	Fatal.	Extension of membr.	3 days.	3 days.	Well marked.	In pharynx and larynx.	
1423 years.	Jan. 3, "	Dr. Book.	Fatal.	Exhaustion.	3 days.	3 days.	Malignant.	In pharynx and larynx.	
1433 years.	Jan. 28, "	Dr. Dietrich.	Recovery.	Extension of membr.	3 days.	3 days.	Well marked.	In pharynx and larynx.	
1444 years.	Feb. 9, "	Dr. Quine.	Fatal.	Uraemia.	3 days.	3 days.	Severe, follow- ing scarlatina.	In pharynx and larynx.	
1454 years.	Feb. 16, "	Dr. Parsons.	Fatal.	Exhaustion.	36 hours.	36 hours.	Malignant.	In pharynx and larynx.	
1462 years.	Feb. 17, "	Dr. Roberts, Lemont.	Recovery.	Extension of membr.	3 days.	3 days.	Absent.	In larynx.	
1475 years.	Feb. 19, "	Dr. Kauffman.	Fatal.	Extension of membr.	3 days.	3 days.	Well marked.	In pharynx and larynx.	
1486 months.	Feb. 27, "	Dr. Rea & Roler.	Fatal.	Obstruction below tube.	3 days.	3 days.	Severe.	In pharynx and larynx.	
1495 years.	March 2, "	Dr. B. D. Foster.	Recovery.	Extension of membr.	6 days.	6 days.	Severe.	In pharynx and larynx.	
1502 years.	March 5, "	Whitman & Holman.	Fatal.	Extension of membr.	24 hours.	24 hours.	Severe.	In pharynx and larynx.	

* Patient ejected the tube with a piece of membrane, which did not re-form, and recovery quickly followed.

SUMMARY OF THE PRECEDING TABLE.

Total number of cases, 150.

Recoveries, 41.

Percentage of recoveries, 27.33.

Average age of all cases, 3 years, 11 months and 3 days. Average age of those recovering, 4 years, 3 mos. and 24 days. Average age of fatal cases, 3 years, 8 mos. and 7 days.

Since the above report the writer has had 9 cases with 3 recoveries, making a total of 159 cases with 44 recoveries, or 27.67 per cent.

will take an unlimited amount of fluid without difficulty, which they can not do with the open tube without the most violent coughing. With infants the difference is not noticeable in all cases, many however will swallow without any difficulty whatever.

In giving liquids it is better to give them from a spoon with the head inclined forwards.

It would naturally be inferred that this metal epiglottis projecting upwards and lying against the true epiglottis would cause greater irritation and more coughing than the open tube, but I have not observed this to be true. The following cases, only two out of many equally happy in termination, illustrate the advantages of this device.

March 2, 1888, I was called by Dr. B. D. Foster to perform intubation upon a little girl $5\frac{1}{2}$ years old. She had been suffering from diphtheria for several days, when the larynx became involved. Both tonsils and uvula were covered with diphtheritic membrane, the urine was loaded with albumen, and the dyspnoea from laryngeal obstruction was intense. The loud stridor of croup was heard all over the house and the case seemed as hopeless as could have been well selected. A tube with the metal epiglottis was introduced giving prompt and entire relief to the difficult breathing. The child revived and took liquid nourishment without the least difficulty. It was a great comfort to be able to give this patient an abundance of water. Milk and brandy were taken freely, without which I am confident recovery would not have resulted, as the child was greatly prostrated. The case progressed favorably, although the urine continued to be loaded with albumen. Forty-eight hours after the operation she ejected the tube, together with a membranous cast. The patient improved somewhat and the respiration remained comfortable without the tube for three days, although on the second day she was taken suddenly with a choking spell and the parents thought she was about to die. After struggling for a few moments she ejected a large piece of false membrane, which gave her relief. The third day after the rejection of the tube the gradual return of the dyspnoea, due to reformation of membrane, necessitated its reintroduction. The dyspnoea at this time had become almost as intense as when the operation was first performed. The child again revived, and continued to improve for three days when the tube was removed. The albuminuria gradually disappeared and the patient made a perfect recovery.

April 13, 1888, I was again called by Dr. Foster, to operate upon a boy $3\frac{1}{2}$ years old. The patient

had been sick about one week with diphtheria of a mild type when the larynx became invaded and the usual symptoms of croup followed. At the time of the operation the symptoms were urgent. The pulse was rapid, the respiration rasping with the stridor heard both on inspiration and expiration. There was sinking in of the walls of the chest with every inspiration, and the patient was bathed in perspiration. As my two smallest tubes in the set were in use I was obliged to introduce a tube suitable for a much older child. The tube with a metal epiglottis was employed and the urgent symptoms were entirely relieved. On account of the large size of the tube fluids could not be taken without some coughing, but solids and semi-solids were swallowed without difficulty. One thirty-second of a grain of bichloride of mercury was given hourly, well diluted, and a steam atomizer constantly employed. The child did remarkably well for two days, when there was partial detachment of membrane below the tube and the respiration suddenly became greatly embarrassed. I was hastily summoned but found the child again breathing comfortably. There was, however, a peculiar, loose, hoarse cough, indicating false membrane below the tube. Fearing sudden suffocation, from detachment of a large mass of false membrane, the tube was removed, when the child, after coughing and strangling for a moment, expelled a large membranous cast of the trachea. As the respiration seemed comfortable without the tube it was not at once reintroduced. Twelve hours later however the membrane reformed and returning dyspnoea again rendered it necessary. A smaller tube was introduced and the patient instantly relieved. With this tube he was able to take liquids without the least difficulty, which rendered it possible to continue with the medicine. The comfort of the child was perfect for twelve hours, when the tube was ejected with a small piece of membrane. Urgent dyspnoea did not return for several hours, but finally, however, it became necessary to again introduce the tube, and when this was done the respiration ceased, the patient became blue and it was necessary to at once remove the tube. The trouble was obvious; membrane had been crowded down below the tube. As the tube was removed another membranous cast was expelled. The simple introduction and removal of the tube was sufficient to detach the membrane and to relieve the urgent dyspnoea. The patient now passed twelve hours without the tube very comfortably, when it again became necessary to introduce it. It was retained for twenty-four hours, during which time he took an abundance of nourishment and water without any annoyance. Indeed it was observed that he took more nourishment and with less difficulty with the tube than without it. The tube finally was expelled, together with another piece of membrane that had become detached below it. The patient now passed eighteen hours without the tube. While the respiration was more or less embarrassed during this time, yet it was hardly sufficient to call for interference until the expiration of this time, when dangerous dyspnoea returned. The tube was again introduced and worn with the same comfort for one night when it was again expelled with a small

patch of membrane. The cough now became loose and considerable membrane was expectorated in small pieces and in the form of muco pus. The dyspnoea did not return and the boy made an excellent recovery.

I have just received a letter from Dr. O'Dwyer, in which he says:

"I received the tubes with artificial epiglottis which I have used in one case at the asylum, and the result as far as swallowing was concerned, was most satisfactory. In fact I never saw a child with the ordinary, unprotected tube swallow anything like as well. The old nurses, who are so thoroughly familiar with this subject, uniformly agreed upon this point. There is no doubt but that this artificial epiglottis will be an immense improvement in the operation."

The metal epiglottis which renders it possible for patients to swallow liquids will, I am convinced, increase the popularity of the operation and enable us to save a larger proportion of patients.

70 Monroe Street.

THE INFANT-FOOD PROBLEM.

Read in the Section on Diseases of Children, at the Thirty-Ninth Annual Meeting of the American Medical Association, May 10, 1888.

BY WM. B. ATKINSON, A.M., M.D.,

PROFESSOR OF DISEASES OF CHILDREN AND SANITARY SCIENCE IN THE MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA.

To the general practitioner everywhere, there constantly comes the question, What means shall be employed to prevent the terrible mortality among infants deprived of their natural food, the mother's breast-milk? As it is in very many cases impossible to place the child outside the walls of a large city, this want of proper hygienic surroundings acts as one great factor in the production of disease. But perhaps the most active cause of disease is the exhaustion of the vital powers from the want of those articles which, being properly and readily assimilated, aid to maintain the body in its highest and healthiest condition. We all know that, other things being equal, that child which has been able to keep its system in the best state, its blood rich and pure, its muscles plump and firm, is sure to pass through an epidemic of children's affections either entirely unscathed or suffering only from a slight attack, readily throwing off the disease and never being troubled with the sequelae.

Defective nutrition, then, is the predominant factor in the causation of the fearful mortality everywhere observed among children. We need only point to the statistics of children's hospitals, founding asylums and similar institutions to show the truth of this proposition.

To us, as physicians and sanitarians, as citizens earnest for the welfare of this great Republic, this comes with powerful import. An additional fact also appeals to us when we learn that the vast majority of these are offspring of the native-born, while those who survive are largely the children of foreigners. This is shown by the valuable statistics of such investigators as Dr. Nathan Allen. Though we are

compelled to admit that other causes, and one a very potent factor, produce the great disproportion between offspring of natives and foreigners, yet it must be admitted that the truth of our original proposition still is evident, that defective vitality causes a vast majority of deaths among infants, and even in children of larger growth.

The latter fact is constantly shown by the great mortality which prevails when, by reason of short crops or other causes, the people are unable to procure the food needed to maintain their systems up to par and thus resist the inroads of disease.

It goes without saying that the infant should be raised on its mother's milk whenever possible. When, for any cause, this fails, then comes the question, what shall be the substitute? Abroad the milk of asses and goats is in quite common use. Cow's milk, being that most easily obtained, is most largely employed in this country. This being the fact, we next come to the consideration as to how the two kinds of milk differ, and what is needed in order to cause that of the cow most nearly to approach that of the human being.

Cow's milk contains more proteid matter, more fat, more mineral matter and less sugar, and as a rule, in health human milk is alkaline, while cow's milk is often slightly acid. One special difficulty with cow's milk is that its casein is more or less likely to form an insoluble mass by contact with the gastric juice, while the casein of human milk is in part a peptone, and forms a very delicate coagulum when in contact with the gastric juice.

The effort is always to produce a food for infants closely resembling in its composition the mother's milk, and the nearer this is reached in all its details, the more surely will such food prove wholesome and valuable to the infant.

Our idea of a standard infant food, then, would be produced as follows: Be sure to obtain the milk of a healthy cow. Just here we may premise that we do not believe in the common fallacy, "one cow's milk." The mixture of the milk of several healthy cows is more sure to give an article of real value. Undoubtedly, many in this audience can substantiate the claim that it is most usually the pet cow, from which is obtained the milk which is put up for the sick baby, that receives all the bashing, hurrying and pelting and, as we all know, is thus likely to yield a milk which may actually be poisonous in its nature. The best combination would be pure milk diluted with sufficient pure water to reduce the relative proportion of albuminoids and mineral constituents most nearly to that of human milk, then partially peptonize or digest it, and finally add a soluble carbo-hydrate with sufficient alkali to produce as close a resemblance to breast-milk as may be. We must not forget that peptonizing milk does not relieve us of the need of being sure that the milk is at the outset pure and fresh.

The milk supply of large cities has now become one of the great problems of the day. Churned in the cans to the city, then more thoroughly churned in the wagons over the wretchedly-paved streets, distributed in many cases from doubtful cans by persons

of much more doubtful appearance as to their own cleanliness; the flavor often aided by the puffing of a cigar or filthy pipe on the part of the distributor, the article is received in many cases in a receptacle of equal doubt as to cleanliness, it is placed, perhaps, in a food chest or so-called refrigerator, exposed to the atmospheric contact of other articles of food. Is it to be wondered at that the milk becomes of a very doubtful form as to its propriety as an infant aliment?

To a certain extent, these objections are met by the new plan of delivering what is called "whole milk." The milk is very carefully placed in glass jars immediately after being drawn from the cow, these, being quite full, are hermetically sealed so that there can be no opportunity of churning or adulteration, or the absorption of odors or disease germs. For children who have passed the age of infancy, I have long been in the habit of urging the employment, particularly during hot weather, of what is called "evaporated milk." Its claims were that it was the milk from healthy, well-fed cows and, being of a density greater than cream, churning and souring were less likely to occur during its transition to the city. Again, it was very much less ready to absorb or appropriate the odors, etc., to which it might be subjected. I have found this more easily borne by the child, and repeatedly I have been compelled to substitute it for the "condensed milk," where a certain proportion of sugar is added in order to preserve the article.

For these reasons, Prof. Vaughan urges the use of dried milk solids, that is, they can be transported without injury from any distance and, if properly prepared, may be kept without putrefaction occurring. Now, if such pure milk from perfectly healthy cows were partially predigested by the process of peptonization with fresh pancreatin, the temperature sufficiently raised to destroy the ferment, then reduced to a powder by evaporation, and to this dextrine added, thus supplying the carbohydrate, we would then come as near the production of a proper food for infants as might be possible in the absence of the breast-milk.

By recent researches, we have been taught that dextrine is the best form of carbohydrate, as it is non-fermentable and does not irritate the stomach of the infant, is easily assimilated and, unlike cane sugar or maltose, is not likely to take on acid fermentation. Roasted wheat flour has long been employed and recommended as an article of food for infants, and particularly where diarrhoea is present. The reason of this is because this process converts the starch of the flour into dextrine.

The malt sugar or so-called "Liebig foods" are no doubt often valuable, particularly in infantile constipation, for their laxative effects, but are extremely liable to continue a diarrhoea or increase it. When these are used for their laxative effect, it is safer to use them alone rather than with milk, lest their fermentative tendency be aggravated by the presence of too great a quantity of albuminoid matter.

I am incited to this remark by the remembrance that the "Liebig foods" do not of themselves meet the requirements demanded for infantile nutrition,

unless with the addition of cow's milk. By an examination of the analyses of such mixtures, we find that they add no essential to cow's milk; nor do these foods act chemically upon the casein, nor physically by reason of their solubility; and, as I have before remarked, they may give rise to disorders of digestion in consequence of the readiness with which they take on fermentation.

Farinaceous foods are of course out of the question, because of the absence of ptyalin in the secretion of the salivary glands in the earlier years of infancy. The addition of starchy matters to cow's milk with the purpose of rendering the coagulum less dense and more easily broken up in the stomach, as has been recommended by some authorities, is wrong in principle; it really adds an indigestible element, which cannot fail to act as a foreign body sure to produce fermentation, acidity, diarrhoea and the usual train of evils.

The milk foods, when diluted with water in accordance with directions, should correspond in nutritive value with human milk. Now, that this correspondence should be more nearly perfect, they should also be partially predigested or peptonized, in order that the casein may be rendered more acceptable. It is also necessary that sugar in some form should be added.

In peptonizing milk, it is of the greatest importance that the pancreatic extract which is employed should be pure and fresh. The odor of some digestive ferments as furnished by the stores is such as to give rise to the suspicion that they are already assuming the putrefactive tendency. In fact, it is a very difficult matter to preserve them, as it is well known that the products of the pancreas are much more readily decomposed than any known animal substance. Hence the greatest care will be necessary that there shall not be the slightest possibility of the presence of putrefactive germs in any of these articles that may be employed to aid in the preparation of the diet of infants. The peptonizing of milk, although apparently a very simple matter as practiced in the laboratory, yet is scarcely feasible in the household.

Another point is of great importance. Malt sugar is eminently prone to absorb moisture, and hence it should not be combined with dried milk and then put in bottles or other form of package for family use, because, as these packages are only partially used at one time, the balance is extremely liable to absorb moisture, resulting in fermentation, and this is more especially the case in hot weather or when kept in a hot room.

We cannot too strongly urge upon all who are compelled to prepare food for infants the great, the imperative necessity of using only water that has been boiled. To the medical man, the reason is plain, yet it would not be amiss for him to explain in each instance why this should be done. Just here it is equally important to see that the water is not cooled by the addition of ice, as we may thus return at once to the water the very organisms which the boiling was intended to expel. I am impelled to this remark by the remembrance of an inspection just made for the State Board of Health of Pennsylvania.

The subject of complaint was the ponds from which the ice was obtained to supply the demands of a large town. These ponds were filled with water from a stream really nothing but a drain for a full graveyard, one or more slaughter-houses, a large number of cesspools which were in constant use, and a large area of swamp land.

In diluting any form of infant food we should give positive, definite quantities. Undoubtedly all of us have encountered many instances where the child was really starving, while apparently receiving a large quantity of fluid. The fact is that the dilution had been carried too far.

It is unnecessary for me to occupy your time with further points as to times for feeding, nor of necessity for using bottles, etc.

Before closing, I may remark that, in my investigation of foods for the preparation of a paper which may be read elsewhere, I received from my friend Chief Medical Purveyor Baxter, of the United States Army, a tabulated analysis of some fifteen forms of foods. Of these, only four contained more than 10 per cent. of nutritive material, thus showing that even here we are likely to be deceived, and to be employing an article as useless for its proposed purpose as the too largely diluted food of the infant already mentioned.

In conclusion permit me to say that it has long been my custom, not only in my practice, but also in my teachings, to urge the giving of less medicine, using it only when imperatively demanded, and to insist upon the value of proper hygiene and proper nourishment, believing that these alone, in many cases, will at once place the child on the road to health, and if persevered in will, as a rule, maintain it there.

GASTROTOMY FOR REMOVAL OF FORK.

BY MAX E. WITTE, M.D.

OF MT. PLEASANT, IOWA.

Mrs. H. W., æt. 31, married, native of Ohio, was admitted to the Iowa Hospital for the Insane at Mt. Pleasant, July 3, 1885, suffering with acute mania. The first symptoms of disease were manifested June 20, 1885, by wild and irrational language and actions.

Since her admission to the Hospital, the maniacal condition has been continuous, and subject to little variation. Her habits have been irregular and disorderly, and at periods she has been decidedly excited and violent.

During the months of October and November, 1887, she had paroxysms of more than usual mental disturbance, during which it was evident that she suffered much pain; would cry out as if in great distress; walk about cramped, and bent forward and to the left. Her mental confusion was so great, however, that no satisfactory information regarding this distress could be obtained from her.

In the early part of December a tumor was detected in the abdominal cavity, to the left of the umbilicus and in a horizontal plane with it. It became daily more painful and caused the patient excruciat-

ing torture, which was fast exhausting her strength. By the middle of the month, the patient had become much emaciated and weakened, and was in a truly marasmic condition. The tumor could be plainly felt through abdominal walls, and was apparently the size of an orange. Its exact character could not be detected.

December 16, pain was even more severe than usual, and a hard pointed body could be felt connected with the tumor, and involving the abdominal walls. The diagnosis was made of a foreign body within the alimentary canal, and perforation of the intestinal walls.

Operation was at once determined upon, since the patient's life was in imminent peril. The writer operated with the efficient assistance of Dr. P. F. Straub, of the Hospital Staff, making an incision three inches long, parallel to the curve of the costal cartilage, on that side, and directly over the foreign body. The four prongs of a large table-fork were found projecting through the anterior walls of the stomach near the greater curvature, which had been dragged downward and to the left. The stomach was opened, and the fork liberated and removed. After thorough exploration of the stomach, and cleansing the edges of gastric opening, they were sutured to abdominal wound by means of deep stitches. This method was chosen since there were some adhesions of stomach to abdominal walls. Another set of more superficial sutures was then introduced to approximate the walls still more closely. Iron dyed silk and strongly curved needles were employed, and during the operation and subsequent dressings strict antiseptic precautions were observed. Patient rallied well from the effects of the operation. Her temperature at no time was above 100° F., nor her pulse over 86. She was free from pain, and slept well with chloral hydrate gr. xxx given nightly by enema.

A little ice was put in her mouth occasionally, but during a period of twelve days following the operation, food by mouth was entirely withheld. She was fed by nutrient enemata, consisting of beef peptonoids, pancreatic emulsions of milk and defibrinated blood.

After this period concentrated and nutritious food was given by mouth, and without causing any trouble. The healing of the operation wound was somewhat retarded by her having during the fourth night, eluded the vigilance of the nurse and turned in bed, thereby partially separating the edges of the wound. This accident was repaired by the freshening of the wound and the introduction of more sutures.

The wound healed throughout the greater extent by first intention, and without resulting fistula. Patient rapidly regained flesh and strength, and is now in usual physical health. Digestion is good, and she has no pain or tenderness anywhere about abdomen.

The fork is seven and one-half inches long, one inch wide across the prongs; is heavy; four pronged, and spoon handled. It is heavily plated with silver, but blackened by action of the gastric juice, where the plating had been chipped off. The fork was missed September 13, 1887, and patient at that time,

and subsequently, stated that she had swallowed it, but the idea seemed so absurd that no credence was given to her story. During more than three months, from September 13 to December 16, 1887, the fork had been in her stomach.

A CASE OF ACUTE RHEUMATISM IN AN INFANT ELEVEN DAYS OLD.

BY ALEX. GUTHRIE, M.D.,

OF CAIRO, ILL.

Inasmuch as this case in its etiological bearings is somewhat unique, I will give a moderately full report of the lying-in period of the mother.

Lillia K., æt. 18, primipara, was delivered of a healthy male child on March 11, 1888. On the 14th she was attacked with severe pain in the umbilical region, followed by a light chill and high fever. Was very restless all night and sent for medical aid the next afternoon. When I arrived the pain was moderately severe and paroxysmal; there was marked tenderness over upper two-thirds of abdomen, but very little over lower third. Temperature $102\frac{1}{2}^{\circ}$. Tongue furred. Breath offensive. One stool yesterday. Lochia normal.

R

Hydragr. chlorid. mite..... gr. 6
Morph. sulph..... gr. 2 $\frac{1}{2}$
M. Chart. No. 3.

S. One every two hours, to be followed in four hours by 1 oz. castor oil and grt. x oil of turpentine; also hot fomentations to bowels.

This produced free catharsis and great relief.

On the evening of the 17th, I was again called, and found her suffering from acute rheumatism, involving both shoulders, left wrist and both knee-joints. Abdominal tenderness had disappeared. Lochia normal. R. Sodii salicylat. gr. x, every two hours. Also, quin. sulphat. gr. v, every four hours, and pulv. ipecac comp. *pro re nata*. Under this treatment she speedily obtained relief and was soon convalescent.

This much by way of its possible etiological bearings on her infant's attack.

During the night of March 21st, and all day on the 22d, her babe was restless, slightly feverish, and cried whenever it was handled. I supposed it to be colicky, and ordered a dose of castor oil, to be followed by grt. iv doses of tinct. opii camphorat. as occasion required. Next morning the mother called my attention to its left wrist, which was much swollen, slightly red, and on the lightest handling or flexing of the joint the child would cry as if in pain. R. Salicylate sodium gr. ss every three hours, and inflamed joint to be wrapped up in a woolen cloth wrung out of a warm solution of bicarbonate of soda.

March 24.—Swelling has somewhat subsided in left wrist, but right knee and upper part of leg are swollen this A.M. To continue treatment.

25th.—Condition unchanged. Salicylate sodium is inefficient, and seems also to disagree with it. To be omitted.

R.

Soda, bicarb..... ʒi

Potas. acetat..... ʒss

Aque menth. pip..... ʒiij

M. S.—5] every two hours, and continue camph. tinct. opium as occasion requires.

27th.—Swelling has almost disappeared from knee and leg, but wrist is still puffy.

28th.—Both wrists and hands are swollen this A.M. Child seems bright and moderately well nourished, and only suffers on handling the swollen joints. To continue treatment.

30th.—This A.M. the swelling has almost disappeared from the right wrist, and is much less at the left wrist-joint.

April 2d.—Has so far recovered that further visits are deemed unnecessary.

The hygienic surroundings were as unfavorable as possible. The house in which the mother was confined was cold and open, and the weather was cold and damp; her arrangements for fire were poor, as were also her food and attention. In addition to this, rheumatism was prevalent in the city. These facts, when taken together with the sudden appearance of the disease, the swollen, tender and painful joints, its migratory character, its yielding to alkalies, and the absence, so far as I could determine, of a syphilitic taint in the mother, seem to me to stamp the disease as acute rheumatism, notwithstanding the tender age of the infant.

Longstreth (On Rheumatism, Gout, and some Allied Disorders, page 22) says: "Only one case has been recorded under the age of one month." Henoch (Lectures on the Diseases of Children. Wm. Wood & Co. 1882. Page 311) reports a case at the age of ten months, which was also followed by hardness and contracture of the adductors of the thigh. Widerhofer observed the disease in a baby twenty-three days old, in the Foundling Hospital at Vienna—the only case of the kind that occurred among 70,000 children in eight years. Stäger met with it in a baby four weeks old. (See Ziemssen's Cyclopædia, Vol. XVI, pages 17 and 18.)

May 15, 1888.

MEDICAL PROGRESS.

EXPERIMENTAL INTESTINAL SURGERY.—At the conclusion of his very able paper, "An Experimental Contribution to Intestinal Surgery with Special Reference to the Treatment of Intestinal Obstruction," read at the Ninth International Medical Congress, DR. N. SENN draws the following conclusions:

1. Traumatic stenosis from partial enterectomy and longitudinal suturing of the wound becomes a source of danger from obstruction or perforation in all cases where the lumen of the bowel is reduced more than one-half in size.

2. Longitudinal suturing of wounds on the mesenteric side of the intestine should never be practiced, as such a procedure is invariably followed by gangrene and perforation by intercepting the vascular supply to the portion of bowel which corresponds to the mesenteric defect.

3. The immediate cause of gangrene in circular

constriction of a loop of intestine is due to obstruction of the venous circulation, and take place first in the majority of cases at a point most remote from the cause of the obstruction.

4. On the convex surface of the bowel a defect an inch in width, from injury or operation, can be closed by transverse suturing without causing obstruction by flexion. In such cases the stenosis is subsequently corrected by a compensating bulging, or dilatation of the mesenteric side of the bowel.

5. Closing a wound of such dimensions on the mesenteric side of the bowel by transverse suturing may give rise to intestinal obstruction by flexion, and to gangrene and perforation by seriously impairing the arterial supply to, and venous return from, the portion of bowel corresponding with the mesenteric defect.

6. Flexion caused by inflammatory and other extrinsic causes gives rise to intestinal obstruction only in case the functional capacity of the flexed portion of the bowel has been impaired or suspended by the causes which have produced the flexion, or, by subsequent pathological conditions which have occurred independently of the flexion.

7. As in flexion, a volvulus gives rise to symptoms of obstruction when the causes which have given rise to a rotation upon its axis of a loop of bowel, have at the same time produced an impairment or suspension of peristalsis in the portion of bowel which constitutes the volvulus, or when a diminution or suspension of peristalsis follows in consequence of the degree or extent of the rotation.

8. Accumulation of intestinal contents above the seat of invagination is one of the most important factors which prevents spontaneous reduction, and which determines gangrene of the intussusceptum and perforation of the bowel.

9. Spontaneous disinvagination is not more frequent in ascending than descending invagination.

10. The immediate or direct cause of gangrene of the intussusceptum is obstruction to the return of venous blood by constriction at the neck of the intussusciptens.

11. Ileo-cæcal invagination, when recent, can frequently be reduced by distention of the colon and rectum with water, but this method of reduction must be practiced with the greatest caution and gentleness, as over-distention of the colon and rectum is productive of multiple longitudinal lacerations of the peritoneal coat, an accident which is followed by the gravest consequences.

12. The competency of the ileo-cæcal valve can only be overcome by over-distention of the cæcum, and is effected by a mechanical separation of the margins of the valve, consequently it is imprudent to attempt the treatment of intestinal obstruction beyond the ileo-cæcal region by injections per rectum.

13. Resection of more than six feet of the small intestine in dogs is uniformly fatal, the cause of death in such cases is always attributable to the immediate effects of the trauma.

14. Resection of more than four feet of the small intestine in dogs is incompatible with normal digestion, absorption and nutrition, and often results in death from marasmus.

15. In cases of extensive intestinal resection the remaining portion of the intestinal tract undergoes compensatory hypertrophy which macroscopically is apparent by thickening of the intestinal coats and increased vascularization.

16. Physiological exclusion of an extensive portion of the intestinal tract does not impair digestion, absorption and nutrition as seriously as the removal of a similar portion by resection.

17. Fæcal accumulation does not take place in the excluded portion of the intestinal canal.

18. The excluded portion of the bowel undergoes progressive atrophy.

19. A modification of Jobert's invagination suture by lining the intussusceptum with a thin flexible rubber ring, and the substitution of catgut for silk sutures is preferable to circular enterorrhaphy by the Czerny-Lambert suture.

20. The line of suturing, or neck of intussusciptens, should be covered by a flap or graft of omentum in all cases of circular resection, as this procedure furnishes an additional protection against perforation.

21. In circular enterorrhaphy the continuity of the peritoneal surface of the ends of the bowel to be united should be procured where the mesentery is detached by uniting the peritoneum with a fine catgut suture before the bowel is sutured, as this modification of the ordinary method furnishes a better security against perforation on the mesenteric side.

22. In cases of complete division of an intestine, if it is deemed advisable not to resort to circular enterorrhaphy, one or both ends of the bowel should be closed by invagination to the depth of an inch, and three stitches of the continued suture embracing only the peritoneal and muscular coats.

23. The formation of a fistulous communication between the bowel above and below the seat of the obstruction should take the place of resection and circular enterorrhaphy in all cases where it is impossible or impracticable to remove the cause of obstruction, or, where after excision it would be impossible to restore the continuity of the intestinal canal by suturing, or where the pathological conditions which gave rise to the obstruction do not constitute an intrinsic source of danger.

24. The formation of an artificial anus in the treatment of intestinal obstruction should only be practiced in cases where continuity of the intestinal canal cannot be restored by making an intestinal anastomosis.

25. Gastro-enterostomy, jejuno-ileostomy and ileo-ileostomy should always be made by lateral apposition with partially or completely decalcified perforated bone plates.

26. In making an intestinal anastomosis for obstruction in the cæcum or colon, the communication above and below the seat of obstruction can be established by lateral apposition with perforated approximation plates, or by lateral implantation of the ileum into the colon or rectum.

27. An ileo-colostomy, or ileo-rectostomy by approximation with decalcified, perforated bone plates, or by lateral implantation should be done in all cases of irreducible ileo-cæcal invagination, where the

local signs do not indicate the existence of gangrene or impending perforation.

28. In all cases of impending gangrene or perforation, the invaginated portion should be excised, both ends of the bowel permanently closed, and the continuity of the intestinal canal restored by making an ileo-colostomy or ileo-rectostomy.

29. The restoration of the continuity of the intestinal canal by perforated approximation plates, or by lateral implantation, should be resorted to in all cases where circular enterorrhaphy is impossible on account of the difference in size of the lumina of the two ends of the bowel.

30. In cases of multiple gunshot wounds of the intestines involving the lateral or convex side of the bowel, the formation of intestinal anastomosis by perforated decalcified bone plates should be preferred to suturing, as this procedure is equally, if not more, safe, and requires less time.

31. Definitive healing of the intestinal wound is only initiated after the formation of a network of new vessels in the product of tissue proliferation from the approximated serous surfaces.

32. Under favorable circumstances quite firm adhesions are found within the peritoneal surfaces in six to twelve hours which effectually resist the pressure from within outward.

33. Scarification of the peritoneum at the seat of coaptation hastens the formation of adhesions and the definitive healing of the intestinal wound.

34. Omental grafts, from one to two inches in width, and sufficiently long to completely encircle the bowel, retain their vitality, become firmly adherent in from twelve to eighteen hours, and are freely supplied with blood-vessels in from eighteen to forty-eight hours.

35. Omental transplantation, or omental grafting, should be done in every circular resection, or suturing of large wounds of the stomach or intestines, as this procedure favors healing of the visceral wound, and affords an additional protection against perforation.—*Annals of Surgery*, June, 1888.

COLD-BATH TREATMENT OF TYPHOID FEVER.—M. GLENARD declares that whenever the cold-bath treatment has been employed in typhoid fever by the fourth day, the malady has had a favorable course. His plan consists in giving, every three hours, night and day, whenever the temperature exceeds 39° C., a bath lasting twenty minutes, at a temperature of from 18° to 20° C. Advanced age, epilepsy, and valvular affections of the heart, *inter alia*, are contraindications. The cold acts as a stimulant to the circulation and lowers the temperature. It tends to prevent complications due to hypostasis and hyperpyrexia, and it assists in maintaining the tone and functions of organs not already damaged. The cold baths never gave rise to bronchitis, pneumonia, or other complications, but if the application of the method be postponed until after the first week they may, of course, be already present, but in such case the gravity and importance will be less than they would be with any other treatment. In complicated cases it is best to begin with baths at 32° C., gradually

cooled down, in order to watch the effect on the brain and heart. Baths should not be given oftener than every three hours, and they should be associated with the administration of stimulants. If necessary, gentle friction may be employed during and after the bath.—*London Med. Recorder*, May 21, 1888.

MALIGNANT TUMORS OF THE PROSTATE.—Neoplasms are in 90 per cent. primitive. In 10 per cent. they affect children from the age of 1 to 10.

Carcinoma furnishes 86 per cent.

Sarcoma is exceptional.

The connections of the gland and its abundance of lymphatics explains the almost constant and rapid spread (diffuse prostatic-pelvic carcinoma).

Implication of the bladder is exceptional.

The predominant symptoms are functional disturbances of the urinary apparatus.

Hematuria is often absent.

The younger the subject, the more rapid the course.

The evolution varies from three months to five years.

The exploration of the pelvic cavity and the existence of radiating pains form the best basis for diagnosis.

The gravity of prognosis and the severity of some symptoms warrant operative interference; but, on the other hand, removal of the tumor is useless, on account of the rapidity of diffusion.—Dr. Engelbach, *Thèse de Paris*, 1888; *Jour. of Cutan. and Genito-Urinary Diseases*, June, 1888.

METHOD OF ESTIMATING ADDUCTION AND ABDUCTION OF THE LEG IN HIP DISEASE.—LOVETT'S method consists in calculating mathematically the angle of deflection. The legs of the patient being placed in a straight line with the body, if one leg be fixed in adduction or abduction there will be lateral tilting of the pelvis. Real shortening can be measured from the anterior superior spine to the malleolus; practical shortening from the umbilicus to a malleolus of each ankle. The line between the anterior superior spines will form two angles with the position it would occupy naturally by closing the latter line diagonally. Either one of these two angles represents the angle of deflection of the leg on the diseased side. To estimate this angle in degrees Dr. Lovett has constructed a table. It will be seen that if the practical shortening is greater than the real shortening the diseased leg is adducted; if less than the real shortening, it is abducted.—*London Med. Recorder*, May 21, 1888.

HYPODERMIC INJECTIONS IN MALARIAL ATTACKS.

—DR. LOYSEL recommends the following formula for hypodermic injection in malarial attacks: Liq. arsenicalis, \mathfrak{m} 50; quinine sulph, 5ss; and tartaric q. s.; aqua destillata, \mathfrak{m} 160. Injection for leucorrhœa—Potassium chloratis, 200 grs.; vin. opii, 5iij; aqua picis (tar water), 5viij.—*London Med. Recorder*, May 21, 1888.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JUNE 16, 1888.

VERNONIN, A NEW CARDIAC POISON.

MM. EDOUARD HECKEL and F. SCHLAGDENHAUFEN have recently communicated to the Académie des Sciences de Paris some facts in regard to vernonin, a new heart poison obtained from *Vernonia nigritiana* (known in Africa as *Batiatiar* or *Batjénfor*), the root of which is used on the west coast of Africa as a febrifuge. As yet it has been impossible to obtain an alkaloid from the plant, but the alcoholic extract of the resin contains the glucoside vernonin, a white powder, slightly hygroscopic, the solution of which is pale yellow. It is only slightly soluble in ether and chloroform. The solutions, when evaporated, leave a colorless deposit of resinous appearance, which strikes a brown color with sulphuric acid, this color passing to a violet purple, and persisting for several hours.

According to Heckel and Schlagdenhauffen, when a few centigrams of the aqueous solution of the alcoholic extract are injected under the skin of the frog (in the thigh) paralysis of the limb soon supervenes. When the dose is large enough the heart soon ceases to beat, as after an injection of digitalis, convallaria, or strophanthus, and other vegetable cardiac poisons. A dose of gram 0.02 caused some cardiac trouble in the frog, but they soon disappear. With a dose of gram 0.04 there was at first a slight diminution in the amplitude of the cardiac movements; then, after about five minutes, the beats were twenty four instead of thirty-three to the minute. In a short time the needle of the cardiograph dragged, and showed only two or three movements a minute. At intervals the arrests were interrupted by distension of the point of the

heart from auricular action. In about forty minutes the heart was completely arrested, the needle tracing a straight line. With a dose of gram 0.09 the same phenomena were observed, and the animal died in about three hours.

Experiments on pigeons showed that gram 0.15 killed the birds in about fifteen hours. The autopsy shows the heart arrested in systole. Gram 0.25 kills a pigeon in about twelve hours.

The experimenters conclude that vernonin is very similar in its action to digitaline, but that its toxicity is twenty five times less marked than that of digitaline. Contrary to what has been supposed, the root of the plant does not contain emetine.

EXIT—THE FAITH-CURE.

Under the title "Christian Science Manslaughter" an item from Malden, Mass., of May 26, states that Judge Pettingill found a Mrs. Abbie H. Corner, a "Christian Scientist," guilty of manslaughter in causing the death of her daughter, Mrs. Lottie James, by neglecting to provide proper medical assistance at the time of her confinement on April 18. She was held in \$5,000 bail.

The case of Mrs. Mary M. Reiter, of Chicago, a woman who clung to Christian Science until death, was investigated by a coroner's jury about ten days ago. Mrs. Reiter had been ill with consumption, under the care of Mrs. John C. Barker, at 715 Fullerton avenue, for the eight weeks preceding her death, with no other treatment than that of Christian Science, which consists principally in telling the patient that she is not sick at all; she only thinks so. The jury recommended that the State's Attorney order an immediate investigation of the case, and not only that, but that all cases treated by Christian scientists, so-called, be investigated.

In California, a week or two ago, some "Salvation Army" people got into trouble by trying to "faith-cure" a sick child, which died.

And so it goes. It is about three years since this new fad had its birth in the East, and by the assistance of the newspapers spread over this country. For the newspapers, nothing was too good to say of it. Now, that the easily foreseen result has occurred, the papers have discovered that all is not wisdom that cries aloud in the streets, and are as ready to publish derogatory items concerning the "faith-cure" as they were at first hasty in flaunting its nonsense in the faces of sensible people. It will not be long before the now votaries of "Christian Science" will be in need of a new fad.

EDITORIAL NOTES.

THE INFLUENCE OF TEREBINTHINATE TREATMENT on the richness of the blood in oxyhemoglobin has been studied by M. E. BREMONT, Fils. This treatment caused increase of weight and profound modifications in the state of the health, all other treatment being suspended. With the assistance of Henocque, who made the hemotoscopic examinations, and of Dr. Fernet, he has found that the quantity of oxyhemoglobin was notably increased, while the duration of the reduction was lessened, the weight of the patient being increased. The three patients examined were phthisical subjects; in one of these, after forty séances, the bacilli became more and more of a sporule form, and the elastic fibres disappeared; in another the bacilli, which were numerous at first, disappeared. This is new evidence of the value of the terebinthinate treatment which, by making the medicine penetrate the skin, transforms the oxygen of the red globules into ozone, it is claimed, and increases its oxidating power without disturbing the digestive functions.

THE OPERATIVE TREATMENT OF ECTOCARDIA has been successfully carried out by M. LANNELONGUE. The patient was a girl, æt. 6 years, a congenital ectocardiæ. About the middle of the sternum was an ulceration about 2 cm. in diameter, and closed at the bottom by a yellowish membrane in process of mortification. This membrane was raised by the heart, and from its surface cardiac tracings could be taken. In a few days this membrane disappeared, and the ventricular wall engaged at the orifice. The cardiac apex was in front of and below the opening. M. Lannelongue made two laterally movable skin flaps, brought them together, and obtained union by second intention. The movements of the heart were sufficient to prevent adhesions. After four months cicatrization is solid, and the operation has practically transformed the ectocardia into subcutaneous cardiac ectopia.

A NEW NORWEGIAN JOURNAL.—We have received Nos. 1 to 10, Vol. I, of *Tidsskrift for praktisk Medicin*, a bi-monthly journal published at Christiania under the editorship of DR. V. UCHEMANN. It is neatly printed, on good paper, and the numbers received contain several interesting articles, among others one by Prof. Voss recording a large number of deformities occurring in his private practice.

ATROPIA POISONING.—In the *Virginia Medical Monthly*, of May, DR. LEWIS G. PEDIGO reports a

case of atropia poisoning, due to the administration of half a grain of the sulphate by mistake. Alcohol, strychnia, morphine, galvanism, and inhalation of nitrite of amyl, occasionally, tided the patient over the crisis, after which the reflex excitability was controlled by bromide of potassium.

THE ANATOMICAL BOARD OF GEORGIA, organized last summer, is doing good work, and the indications are that an abundance of anatomical material will be supplied to the colleges in the State. The law provides that all bodies required to be buried at the public expense, except those claimed by relatives, shall be turned over to the Board.

EPHEDRIN, A NEW MYDRIATIC.—KINOSUKE MIURA has found that ephedrin, the active principle of *ephedra vulgaris*, isolated by Professor W. N. Nagai, causes mydriasis of from 5 to 20 hours duration when used in a 10 per cent. solution. Its use is not followed by bad effects.

HOSPITAL TAX IN ST. PETERSBURG.—The municipal authorities of St. Petersburg have determined to impose a tax—if the Czar permit—on all citizens more than 17 years old. Men will be taxed \$1.00 and women \$.75. All persons paying this tax will be treated gratuitously at the hospitals.

RETIREMENT OF PROFESSOR DONDEES.—PROFESSOR FRANCISCUS CORNELIS DONDEES, the well-known ophthalmologist of Utrecht, celebrated his seventieth birth-day on May 27, and retired from his chair in the University, according to the Netherland law.

ONTARIO MEDICAL LIBRARY ASSOCIATION.—This Association has been formed to provide a reference medical library for the use of the profession in Ontario. The nominal capital is \$10,000, the shares being \$5 each.

LIPANINE, a substitute for cod-liver oil, is a substance made by Kahlbaum, of Berlin, by partial saponification of olive oil. Kohts claims that he has been pleased with the results of its use in his children's clinic in Strassburg.

EXTRAORDINARY REJECTION OF CANDIDATES.—In British Columbia this year all the candidates who went before the examining board were referred to their studies. It should be said that the *all* included two candidates only.

A MARBLE BUST OF CARL SCHRÖDER was placed in the Frauenklinik of the University of Berlin on May 27.

SPECIAL ARTICLE.

THE TRANSPLANTING OF A RABBIT'S CORNEA INTO THE HUMAN EYE

DR. JULIAN J. CHISHOLM has recently successfully performed this operation at the Presbyterian Eye, Ear and Throat Charity Hospital, of Baltimore city. The patient was a healthy man, 35 years of age, who had lost both eyes from the effects of caustic lime three years since. Symblepharon, or the union of the eye-lids to the entire surface of the eye-balls, was the outgrowth of the accident, with the sloughing surfaces of conjunctiva induced by the lime. Operations had been done successfully to liberate the lids from the cornea but still the fleshy opaque cornea remained with no prospect whatever of clearing up. In this hopelessly blind man Dr. Chisholm has successfully performed that wonderful operation devised by Prof. von Hippel, of Giessen, Germany, viz: the insertion of a clear piece of a rabbit's cornea into an opening made for it through the opaque human cornea. This section and fitting can be done only by the use of von Hippel's cornea trephine, a circular blade similar to that of the artificial leech, made to run by clock-work.

To perform the operation properly the opaque cornea of the human subject must be removed down to Descemet's membrane, which must not be punctured. This requires great delicacy in the manipulation of the trephine. When nearly the whole thickness of the cornea has been cut through the circular piece must be seized by the forceps and drawn away, leaving the thin lining membrane of the anterior chamber intact. With the same trephine a duplicate plug of the rabbit's cornea is taken, going this time quite through into the anterior chamber, and therefore including the membrane of Descemet. It is necessary to have this additional thickness in the graft to make it equal to the piece of cornea removed from the human eye, so as to keep the superficial surfaces on the same plane. The round segment from the rabbit's cornea is then carefully adjusted to the opening made in the centre of the human cornea, Descemet's surface to Descemet's surface, and represents a clear central corneal window corresponding to the pupillary space. The closure of the lids with compress and bandage completes the operation. In a very few days the graft, as in skin grafting, becomes adherent; and the wonderful effects of this delicate operation begin to be enjoyed by the patient.

As both the man's and the rabbit's eye were under the effects of cocaine, no pain was experienced by the man nor exhibited by the rabbit.

So far as is known only three ophthalmic surgeons have performed this operation: Dr. von Hippel, in Giessen, Dr. Fox, in Philadelphia, and now Dr. Chisholm, in Baltimore. The advantages of this transplantation cannot be applied to all lost eyes. Unfortunately it is restricted to cases of corneal opacity in which the internal structures of the eye retain their integrity. Iris, pupil, lens and retina must all be good, otherwise no benefit will accrue. Even these restrictions, however, open this great blessing of restored sight to a large class of persons heretofore considered hopelessly blind.

SOCIETY PROCEEDINGS.

CONNECTICUT STATE MEDICAL SOCIETY.

Held in the City Hall, New Haven, May 23 and 24, 1888.

WEDNESDAY, MAY 23—FIRST DAY.

THE PRESIDENT, DR. FRANCIS BACON, of New Haven, called the Society to order at 3 P.M.

After hearing the report of the committee on credentials, THE PRESIDENT delivered his

ANNUAL ADDRESS.

He welcomed those present, and spoke upon the *Proposed Changes in the Charter*. These had caused serious disturbance in the Society for a number of years, and he hoped that it would be settled this year so that more time could be given to scientific work. He advised that a standing committee be appointed to watch the interests of the Society in the legislature of the State, so that no unjust laws, in regard to the profession, should be passed without a protest from this body. He would be pleased to see the meetings of the Society held in the several cities of the State, and not alternate between New Haven and Hartford, as has always been the custom. This, he thought, would create an interest in some parts of the State where at present there was no interest felt.

He announced that both the Treasurer and Secretary declined to hold their positions any longer, and that it would be necessary to elect new men to hold the offices that had been so ably filled for so many years. He thought the President should be chosen on account of his fitness and not because he came from any particular county, and it was a detriment to the Society to follow any rotation in the position of President.

THE TREASURER reported that there had been received during the year \$768.21; and there had been expended \$695.20. He had on hand at present \$832.13.

DR. J. C. DALTON, of New York, was elected an honorary member of the Society.

The committee on honorary members proposed the name of DR. EDWARD M. MOORE, of Buffalo, N. Y. According to custom this was laid over until the next annual meeting.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President—Dr. Geo. L. Porter, of Bridgeport.

Vice-President—Dr. O. Brown, of Washington.

Treasurer—Dr. W. W. Knight, of Hartford.

Secretary—Dr. N. E. Worden, of Bridgeport.

Committee on Matters of Professional Interest—Drs. L. P. Almy, L. S. Day and W. L. Ford.

Dissertator—Dr. P. H. Ingalls.

Delegates to the American Medical Association—Drs. J. B. Kent, C. B. Newton, E. C. Kinney, W. H. Welch, S. J. St. John, C. B. Hill, F. D. Edgarton, W. H. Bull, B. W. Munson and F. E. Beckwith.

Delegates to the Medical Societies of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, New York and New Jersey were also elected.

In the evening the Society was invited, by the faculty of the Yale Medical School, to attend a

MICROSCOPICAL SOIRÉE,

after which Dr. Francis Bacon tendered a reception to the members at his residence.

THURSDAY, MAY 24—SECOND DAY.

At 9 P.M. the Society was called to order, with the President in the Chair. The Secretary reported that there had been received during the year

THIRTY FOUR NEW MEMBERS,

that ten of the old members had died, and two had been dropped from membership. A large number had left the State during the year. The total membership at present is four hundred and ninety-four.

The *Annual Address of the President to the Society* was then given. In this the President spoke of

THE RELATION OF THE INSANE TO THE LAWS OF THE STATE.

This State compares most unfavorably with the majority of the States. Any "reputable physician" can send his neighbor into confinement by certifying that he is insane. He thought a competent and permanent commission should be appointed to act in all cases of suspected insanity. He also spoke of the plea of "emotional insanity" so often brought before the courts, and said he was glad the courts of Connecticut had never been disgraced by such a plea. He did not think experts could diagnose between emotional insanity and uncontrollable anger. The expert testimony often given was of no value, the witness generally testifying for the side they were employed. He asked the question, What are the "romantic indicia," and what is their diagnostic value? In listening to the expert witnesses we are impressed with the abundance, variety and certainty of these signs, but in studying the best systematic treatises we are struck with the poverty and insignificance of the same phenomena as materials for diagnosis. He quoted a number of cases where time proved that the expert testimony was just opposite to the true state of affairs.

He thought in all cases of homicidal mania, even if emotional insanity, that society demands as a protection against future attacks, that the person in question should be confined for life and not for any definite period.

Delegates from Massachusetts, Vermont and Rhode Island were then introduced and made a few remarks.

This was followed by reports of delegates from this Society to those of neighboring States.

Dr. R. M. Griswold read a paper, taking his subject from Genesis, III, 16.

"IN SORROW THOU SHALT BRING FORTH CHILDREN."

He said man was perfect until the downfall of Adam, and as a punishment pain and sickness was sent. Deformed and diseased women are met everywhere by the obstetrician. He then spoke at length of the means we have of assisting women in labor. For uterine inertia he used quinine, ginger, in the form of hot tea, and exercise. He gave the quinine in doses

of from 2 to 5 grains every twenty minutes until four or five doses had been given, and this was usually all that was required. Chloroform and emetics he used for rigid os. When the pain was so severe a woman could not help herself, a little chloroform at the beginning of the pain would be of very great assistance. Forceps he thought of great utility, and wondered that in this age of building monuments that the women did not build a monument to Chamberlain, their inventor. By the use of forceps the number of still-births are greatly lessened and ruptures more infrequent.

In the discussion that followed Dr. DOUGLAS said that he thought quinine, combined with an aromatic, more effective than when given alone.

Dr. KINNEY would never give ergot until the child could be immediately delivered, but would never hesitate to use forceps when the vagina began to grow dry.

Dr. J. McKENISTON read a paper on

PARALDEHYDE.

As a sleep-producer this drug was what had been sought for for many years. There was no disagreeable after effect. He recommended that it be given after the patient had obtained what natural sleep he could. He frequently had given it in 5j doses until three doses had been given, and then if the desired effect was not obtained he used something else, but in his hands it had seldom failed. It is a perfectly safe drug and is not likely to injure any important organ. As compared with chloral and bromide, he considered its action quicker than than of chloral and as safe as bromide and more to be depended upon.

Dr. G. M. SHEPHERD read a paper on

THE FREQUENCY OF ALBUMIN IN THE URINE OF THE HEALTHY.

For a long time this has been observed and recognized to be of only temporary occurrence. He quoted the late Dr. Flint as saying that albumin in the urine, even with casts, was not always a grave symptom. He read a large number of statistics showing the frequency of this occurrence.

ALCOHOL IN THERAPEUTICS

was the title of a paper read by Dr. E. F. PARSONS.

Scripture was quoted by him to show that in the time of Christ, and long before that, alcohol was used as a medicine. He thought no one should hesitate to use it when nature demanded it. It is a stimulant to the brain, heart and stomach, increases the size of the capillaries and raises temperature. He asserted that alcohol is a food. It can carry on the duties of the body, for a time, without the loss of weight. It should be used in all diseases that cause death by exhaustion. He said that Dr. B. W. Richardson, of London, and Dr. N. S. Davis, of Chicago, were among the most prominent of those opposed to alcohol in therapeutics, and even these gentlemen used it in some instances.

Dr. C. B. NEWTON read a paper on

PNEUMONIA,

speaking more particularly upon the prevention than

treatment. He thought a lower temperature should be kept in the dwelling-houses and work-shops than is usual in most houses and manufactories.

DR. J. K. THACHER read a paper on the

RELATION BETWEEN CARDIAC HYPERTROPHY
AND NEPHRITIS.

He gave the history of a case of nephritis following scarlet fever. From the first appearance of the nephritis there was increased arterial tension, and later cardiac hypertrophy. A few weeks after the nephritis disappeared. This case and others similar lead him to believe that the cardiac hypertrophy was secondary to the nephritis.

DR. G. C. SEGUR reported a case of

TYPHOID FEVER IN A CHILD AGED 13 YEARS.

This had been treated with antipyrim in doses of 15 to 20 grs. with the best of results. He thought antipyrim particularly suited to the treatment of the high temperature of typhoid fever.

The papers that had been read before the several county societies were read by title.

The meeting adjourned at 3 P.M., to the New Haven House, where the annual dinner was held.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, May 9, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE
CHAIR.

DR. G. E. DE SCHWEINITZ read a paper on

SOME CASES OF HABIT CHOREA, AND THEIR
TREATMENT.

As is well known, there are certain local choreas for which no definite cause can be assigned, and in which, as Dr. Wood puts it, the movements closely simulate purposive acts. A child suffering with this malady—for it usually occurs in children, especially girls—is brought for treatment because it has adopted some trick of gesture. An eye may be rapidly winked, or the eyeball rolled upward, or the brow wrinkled, or the facial muscles contorted, or, it may be, the shoulder is shrugged, or a forward movement of the head or jaw indulged in. At first these movements are under the control of the will, but gradually become more and more obstinate, and more and more aggravated, especially when attention is drawn to them, and sometimes the variety of the performances in a single day is truly remarkable. This affection has been admirably described by Dr. S. Weir Mitchell, and from him has received the name Habit Chorea.¹

A number of these cases have occurred to me in the past few years, in which the examination and treatment of the eyes have proved of distinct advantage to the patient, and these may prove interesting.

Case 1.—A. B., a girl, æt. 10, was referred to me by Dr. Wharton Sinkler, Feb. 2, 1885. This child

had been brought to Dr. Sinkler about a year before, and then the following facts were elicited: No history of rheumatism; scarlatina when 6 years old. General health good, appetite and digestion normal. The movements noted were confined to the orbicularis, the right side of the face and neck, and to the tongue. In spite of the most judicious antichoreic treatment these remained unchanged. The following results were obtained by an eye examination:

$\begin{matrix} 15 \\ \text{O.D.} \end{matrix}$ —Amplitude of accommodation 3 D.
NL

$\begin{matrix} 15 \\ \text{O.S.} \end{matrix}$ —Amplitude of accommodation 8.5 D.
XXX

Conjunctivæ injected, slight blepharitis in each eye, and a history of successive crops of styes.

O.D. Small oval disk; choroid ring all around, absorbing at outer side. Retina markedly striated, veiling all edges of disk except the temporal. Many lymph reflexes. O.S. Oval disk, less retinal striation, but inner side of disc veiled.

Atropine solution to full ciliary paralysis was ordered, and the error of refraction determined. This proved to be as follows:

$\begin{matrix} \text{O.D.} + 2.5 \text{ } \odot + 1. \text{ c. axis } 90. \\ \text{O.S.} - 2.25 \text{ } \odot + 0.60 \text{ c. axis } 90. \end{matrix}$

The full correction was ordered, the constitutional remedies continued and the result was an entire cure of the spasmodic movements.

Case 2.—J. H. B., a lad æt. 17, referred to me by Dr. S. Weir Mitchell, Nov. 5, 1886. This boy had consulted Dr. Mitchell because he had "got a trick" of twitching his eyes and rolling the balls upward. Before he saw Dr. Mitchell he had been treated with a long course of arsenic and a number of antichoreic and antispasmodic remedies without avail. An eye examination revealed the following points:

$\begin{matrix} 15 \\ \text{O.D.} \end{matrix}$ —Amplitude of accommodation 7 D.
XX

$\begin{matrix} 15 \\ \text{O.S.} \end{matrix}$ —Amplitude of accommodation 6 D.
XX

Conjunctival watery and posterior conjunctival vessels injected and tortuous.

O.D. Small nerve, a white patch over central vessels. Retina much striated and general choroidal disturbance, with a halo-like band at the lower and outer side of the disc. O.S. Small nerve. Central lymph-sheath full, and nerve surrounded by a broad halo-like band.

Sulphate of hyoscyamina to full ciliary paralysis was ordered, and the correction of the refraction error determined as follows:

$\begin{matrix} \text{O.D.} - 0.60 \text{ c. axis } 60. \\ \text{O.S.} + 0.25 \text{ } \odot - 0.60 \text{ c. axis } 90. \end{matrix}$

This glass was ordered, and after several months of rest the boy allowed to resume his studies. Ten months later he returned, and the movements had almost absolutely disappeared. His vision then,

through the correcting glass, was with each eye, $\begin{matrix} 15 \\ \text{O.D.} \end{matrix}$ —, and the amplitude of accommodation was 10 D. Through these glasses there was at 30 centimetres

¹Nervous Diseases, 2d edition, by S. Weir Mitchell, M.D.

an exophoria (insufficiency of the interni) of 4° ; no disturbance of equispace at twenty feet. The abducting power was 7° .

Case 3.—M. E., a girl, æt. 18, referred to me by Dr. Wharton Sinkler, May 20, 1887. The patient's mother had chorea when a child. The patient herself was perfectly healthy until she was 10 years of age. She was then attacked with general chorea, which, however, chiefly affected the face, arms, and the shoulders. At 12 years of age menstruation was established, and the chorea ceased, except for the movements of a spasmodic character, which continued in the face, eyelids, and eyebrows. For a time these grew better, but later, for a space of two years, grew worse, and the habit became more fixed. In April, of 1887, the patient was in fair general health, with occasional dyspeptic attacks and dysmenorrhea. The movements were now confined to the upper part of the face, and consisted in sudden tight closing of the eyes, rapid raising of the eyebrows and wrinkling of the forehead, with to-and-fro movements of the occipito-frontalis, and an occasional jerk of the head and shrug of the shoulder. The movements were not constant, but were increased when attention was drawn to the trouble. The eye examination yielded the following results:

O.D. $\frac{15}{XX}$. Amplitude of accommodation 8 D.

O.S. $\frac{15}{XX}$. Amplitude of accommodation 8 D.

Conjunctivæ slightly suffused, distinct dread of light, and the retrotarsal folds studded with numerous phlyctenules. In each eye round disk, slight crescents at the outer sides, and marked retinal striation. Refraction doubtful, fundus best studied with concave glass, probably spasm.

Atropine in full strength was used for four days, and complete ciliary paralysis secured. The vision

steadily rose, and on the fourth day was easily—
and unimproved by any glass; in short, the eyes were absolutely emmetropic. The mydriatic was continued until all traces of the phlyctenular conjunctivitis had disappeared, and the retinal congestion had subsided. During this treatment the movements markedly decreased, although formerly under the best of internal medication these had stubbornly resisted. About a year later, when last seen, the head movements had entirely ceased; there was an occasional shrug of the shoulder; the eyes were comfortable, the vision and accommodation normal; exophoria 2° at 5 metres.

Case 4.—D. G., a boy, æt. 10, referred to me by Dr. James C. Wilson, under whose care the patient was for catarrhal jaundice. For some time the boy had adopted the habit of "making faces." This peculiarity had well-nigh ceased during a period when he was laid up in bed with an injury. One movement, however, persisted, viz., a remarkable spasmodic contraction of the right orbicularis palpebrarum almost as complete and decided as if a current had been applied to the motor point. The eyes were as follows:

O.D. $\frac{15}{XV}$. Amplitude of accommodation 9 D.

O.S. $\frac{15}{XV}$. Amplitude of accommodation 10 D. Exophoria in accommodation 7° .

Eyelids heavy; caruncles swollen. The conjunctiva, especially of the fornix, reddened and velvety, and the lymph-follicles swollen; slight mucopurulent discharge in the mornings. Reading was an effort, and sometimes occasioned headache.

O.D. Round nerve, central venous lymph sheath full; retina striated. O.S. Oval disc, slightly hazy retina, and full venous lymph sheaths. Cumulative instillations of homatropine were ordered, and the refraction tested and found to be O.D. $+0.65$ s. O.S. $+0.50$ s.

This glass was ordered for all near work, and the local condition in the conjunctiva treated with boric acid, insufflation of calomel, and later painting with a weak solution of nitrate of silver. Internally, Dr. Wilson ordered Fowler's solution in ascending doses.

A month later a letter stated that the eyes were more comfortable, and the twitching was seldom noticed.

Case 5.—S. B., a girl, æt. 16, referred to me by Dr. S. Weir Mitchell Jan. 9, 1888. This patient was a finely developed girl, perfectly healthy, no history of rheumatism, scarlatina, or fright. She had formed the habit of rapidly winking, or spasmodically closing the eyes, especially the right one. The movement, at first under the control of the will, gradually became fixed, and was a source of much annoyance and embarrassment. She also suffered from severe brow-ache. An examination of her eyes

yielded the following results: O.D. $\frac{15}{XV}$. Amplitude

of accommodation 10 D. O.S. $\frac{15}{XV}$. Amplitude of

accommodation 10 D. Exophoria in accommodation 7° . The external appearances of the eyes were normal; the conjunctivæ smooth, the vessels free from congestion. Full atropine mydriasis was secured, and the refraction error determined O.D. $+2.25$ s. O.S. $+2.25$ s.

A full correction was ordered; Fowler's solution was given internally, and one month after the treatment was begun the headaches had disappeared and the spasmodic movements well-nigh subsided.

Case 6.—A. B., a boy æt. 11, was brought to me for an eye examination. This lad was of fine physical development, with no family or personal nervous taint, except that he had for some time been noticed to squint his eyes inward, as children often do "for fun," and rapidly close and open his eyes, making at the same time a curious grimace. The boy was very fond of books, and this habit was most marked when he was poring over some work which was especially interesting to him. The eye examina-

tion was as follows: O.D. $\frac{15}{XV}$. Amplitude of ac-

commodation 8 D. O.S.—¹⁵
 XV
 Amplitude of accom-
 modulation 8 D. No insufficiency.

Conjunctivæ suffused. and posterior vessels injected.

In each eye irregularly oval disks; conus; full central lymph sheaths, and general retino-choroidal disturbance. H.=1.5 D. V. V. higher. Atropine and correction of the refraction error was advised, but advice was declined. The boy was, however, forbidden to use his eyes for near work as much as possible and given the usual remedies. When last heard from he was reported as better, but the habit spasm still continued.

Case 7.—W. F. C., a young man, æt. 18, applied for treatment Jan. 17, 1888. His general health was good. No history of rheumatism. Works hard in a factory. A few years ago, when about 12 years of age, had attacks of "chorea," confined to the muscles of the face, chiefly the orbicularis. This passed away under general treatment. For some months past he had acquired the habit of rapidly closing and shutting his eyes, with a quick, snapping movement. No other muscles affected. This was partially under control of the will, but was made worse under examination. The eyes were examined and found as follows:

O.D.—¹⁵
 XV
 Amplitude of accommodation 8.5 D.
 L. Hyperphoria 1°.

O.S.—¹⁵
 XII
 Amplitude of accommodation 8.5 D.
 Exophoria 2°.

Conjunctivæ injected, but not catarrhal, no phlyctænules or swollen lymph follicles. Small oval optic disks; nasal edges veiled, and coarse retinal striatum above and below, veins and central sheaths full. Distinct dread of light.

Atropine was ordered, and continued for several days. Under this the refraction was found to be O.D. + 0.60 s. O.S. + 0.50 s.

These glasses were ordered for constant wear. No constitutional treatment was given. Some months later he was reported as comfortable, so far as the eyes were concerned, and that the nervousness had departed.

These seven cases suffice to give an idea of what service the correction of the errors of refraction was in the treatment of this disorder. In three of them the habit spasm, as Gowers would say, had existed for a long time, and judicious internal medication and proper hygiene had failed to achieve the desired result; which result, however, was attained after the eyes had been thoroughly treated and corrected. In two others the constitutional and the eye treatment were begun simultaneously, and the rapid improvement showed the value of this combination. In one instance the eye examination and the correction of the anomalies of refraction were declined, and the habit still continues. In another the wearing of the glasses was the only course pursued and the result was most favorable. In all the cases where errors of

refraction existed these were either hypermetropia or hypermetropic astigmatism; in two the errors were 2 D. and more; in three less than 1 D., and in one the eyes were emmetropic. It is not unworthy to call attention to the fact that so low an error as 0.50 D. may prove an exciting cause, the removal of which aids in restoring the patient to a normal tone. Case 3 is especially interesting, because here a general chorea disappeared, and in its place came a habit chorea—for there is no doubt that the disorder in this patient is correctly so classified—exactly as Dr. Mitchell has observed, in a few instances these cases lapse into well-pronounced chorea of the ordinary type. It is further useful to observe that the eyes in this case were emmetropic, but that when the existing spasm of accommodation and phlyctenular conjunctivitis had disappeared under the use of the atropine, the patient made rapid strides along the road to recovery. This leads me to speak of the value of closely observing the condition of the conjunctiva, especially of the retro-tarsal folds, in this malady. Years ago, the late Prof. Fr. Horner² called attention to the fact that children, when they first attended school, were sometimes observed to be given to undue winking of the eyes and that without the presence of strong light. As an accompaniment, there were often movements of the muscles of the face, arm, or leg. In these cases the local cause was most often found to be some disorder of the conjunctiva, especially follicular catarrh, blepharitis, or an anomaly of refraction, usually hypermetropia. Indeed, in a few instances, the local condition was manifestly the exciting cause of a chorea minor. Treatment of the conjunctival catarrh and correction of the hypermetropia, removed the difficulty. Not only may the local conjunctival disturbance and the refraction errors exist, but there may be also imperfect equipoise of the eye-muscles. It is scarcely necessary to refer to this as a possible important factor. In recent times much graver nervous disorders have been attributed to such insufficiencies of the ocular muscles, and for their correction by surgical and other means, most brilliant results have been claimed.

It is very far from my intention to give an undue importance to these errors of refraction and inflammation of the conjunctiva as exciting agents in the causation of habit chorea. I am not unmindful of the large number of instances that may be directly traced to nasal disorders,³ to diseases of the pharynx; nor do I forget that other large class to which no adequate cause can be assigned. I only wish to recall to the memory the value of searching for these among the other causes, and to emphasize the facts that if the habit spasm especially affects the muscles of the face, particularly those around the eye, the following points deserve attention:

1. The condition of the refraction and the muscular balance should be carefully examined and if found abnormal corrected.
2. The anomaly of refraction should be determined under complete ciliary paralysis and the full, not a partial, correction ordered.

² Handbuch der Kinderkrankheiten. C. Gerhard. Fünfter Band, zweite Abtheilung. Tübingen, 1882.

³ Jacobi: Amer. Jour. Med. Sciences, N. S., 1880, vol. 517-522.

3. This correction should be employed in conjunction with proper internal medication and general hygiene and not to the exclusion of these measures.

DR. S. SOLIS COHEN: I have met, more especially in dispensary practice, with a number of cases similar to those reported. Prof. DaCosta has for many years called the attention of his classes at the Jefferson Hospital Clinics to this group of choreic disorders associated with eye-strain, and during my service as Chief of the Medical Clinic there would be from three to six such cases presented during the term. In nearly every instance the defect was hypermetropic astigmatism; in most of the few remaining, simple hypermetropia; in one or two, if my recollection serves, simple astigmatism. In order to note the effect of correction of the refractive error the medication was confined to peppermint water. Some of the cases were affected with facial spasm only, but a few had spasm of the limbs as well. In one or two cases the spasms were unilateral, though I cannot say now whether the error was also unilateral. My impression is that it was not.

In every case that remained under observation cure was effected by the correction without medication. Some of the patients disappeared after correction and in these, presumably, recovery was immediate. In a case now under my care in private practice, a girl complained of frequently falling in the street, from sudden failure, as she expressed it, "of the knees." The eyes were prominent, and the heart rapid, so that a suspicion of Graves' disease was entertained. About a week ago Dr. Jackson corrected the hypermetropia which he discovered, and to-day the girl reported to me that she had been perfectly well since. The apparent protrusion of the eyes being due to muscular effort, has disappeared, and the cardiac rapidity has abated.

I presume that the reason we find this association of nervous spasm with hypermetropia rather than myopia, is that the former gives greater and more constant strain upon the muscles of accommodation.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, May 3, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D., IN THE CHAIR.

DR. JOSEPH PRICE reported a case of

TYPHOID FEVER FOLLOWING OVARIOTOMY.

Mrs. E. N., æt. 37, one child sixteen years ago, one miscarriage fourteen years ago, complaining since miscarriage of great pelvic pain, etc., was operated on at the Gynecæan Hospital, February 11, 1888, for the removal of the right uterine appendages. The tube and ovary were firmly adherent to and under the fundus uteri. The ovary was enlarged and cystic. The removal was not difficult and the operation was completed in twenty minutes. Two years previously the left appendages were removed for a small inflamed and adherent ovarian cyst, the right side at that time appearing perfectly healthy. The recovery

from this first operation was speedy, and for a year the patient seemed in perfect health. Then the symptoms of pelvic trouble returned and were referred to the right side. From the second operation the patient reacted perfectly, and for nine days her temperature constantly remained above normal, varying from 98.6° to 100.1°, the intermissions never amounting to 1°. During this time she also complained of a good deal of headache, weakness and mental depression. On the evening of the ninth day her temperature ran up to 102° and she had a slight rigor. From that time she presented a typical case of typhoid fever, including the characteristic temperature record, stools and eruption. The nervous symptoms were not particularly marked. The temperature varied from 99.8° to 104.8° for four weeks. The patient made a good recovery and is now in better health than before the operation.

The points of interest in this case are, first, that the patient was probably in the early stage of typhoid fever when she entered the hospital, there having been no cases of typhoid in or near the hospital at that time; second, the operation did not seem to influence the course of the fever nor the fever the result of the operation; third, the temperature, combined with the early constipation and meteorism, were naturally attributed to the operation and treated accordingly until the diagnosis of typhoid fever was made, after which the usual expectant treatment for that disease was pursued.

DR. HOWARD A. KELLY exhibited a

KNIFE-BLADE TENACULUM.

While he had rarely found, in his experience, that local depletion was alone valuable as an agent for the cure of any form of uterine disease, he frequently found it a powerful adjuvant, similar in its results to the benefits obtained from the cotton tampon.

Chronic or recurring pelvic congestions, accompanied by great pain and discomfort, can often be tapped by a free depletion of the cervix, and the patient's condition temporarily much improved. Many of the neurotic symptoms associated with a congested, puffy, blue, plethoric cervix, also undergo marked improvement with this plan of treatment, judiciously carried out, combined with applications of glycerole packs or tamponing.

He knew of no other method equally serviceable and speedy for the treatment of lacerations of the cervix with eversion and infiltration of the lips. Many cases upon which he had heretofore been in the habit of operating now recover perfectly when thus treated, and remain well if the uterus is prevented from sagging, by giving proper support to a torn or relaxed outlet. Except in the latter condition, when associated with lacerations, depletion is not often called for in spare or anæmic patients.

To secure any advantage by this method it must be carried out thoroughly. I am in the habit of drawing from 6 drachms to 1 oz. or 1½ oz. of blood every five days or once a week, following the depletion immediately by a glycerole or boracic acid pack, which is often retained until the next depletion.

To deplete the congested pelvic organs he has used

the cervix on both vaginal and uterine surfaces and the vault of the vagina, the latter being used in a series of experimental studies. He is not sure that it has any special advantage over the simple depletion of the cervix. Serious difficulties have occasionally arisen in other hands from too deep a penetration of the scarifier, which may wound an artery of large calibre and give rise to alarming hemorrhage. Difficulties also arise in the use of the spear-pointed instruments, which often occasion great pain to the patient, obliging the operator to desist or to make but few punctures. A serious practical objection against the straight instruments in use, is that the depletion can only be practiced with safety and satisfaction upon the prominent rounded extremity of the cervix. To obviate these objections he had invented the "knife-blade tenaculum" here figured, which had been in



extensive use in his office for many months. It is made like an ordinary tenaculum with a blade in place of the hook. This blade is placed at an angle slightly obtuse to the handle, and about the same length as the point on the ordinary rectangular uterine tenaculum. In using it the cervix should be fixed by a tenaculum in the uterine canal, when the small, short blade of the instrument can be plunged rapidly in a number of places into the vaginal surface of the cervix anteriorly and laterally, and even within the cervical canal, being sometimes used to open a very small external os. The shortness of the blade, and the fact that it is placed at an angle to the shaft, prevents a deep and dangerous penetration, and if the cutting edge is kept sharp and it is used with rapidity it occasions, as a rule, but little pain to the patient.

This tenaculum is made entirely of metal, $7\frac{1}{2}$ in. in length, tapering gracefully from handle to the blade, which is $\frac{1}{8}$ of an inch long, $\frac{1}{8}$ of an inch broad at its base, $\frac{1}{8}$ of an inch wide on its back. A very satisfactory model has been made by Mr. Gemrig, of this city, who furnishes the wood cut.

DR. J. C. DA COSTA was glad to hear Dr. Kelly speak so highly of the value of depletion in certain diseases of the uterus. He was in the habit of exemplifying this by the exhibition, each winter, of one or two suitable cases to his class at the Jefferson Hospital. He thought if from 1 to 4 ozs. or more blood was removed, instead of 6 drachms, that the effect would be better. A woman who, when placed on the table, is suffering with great pain and with an argy-looking cervix, will, after such treatment, leave the table free from pain and with the uterus paled down. The knife exhibited he thought was very pretty, but an ordinary straight bistoury enabled him to puncture the neck all over and inside as well. Even if an artery were cut it was of small matter. The trouble usually was that the bleeding stopped too soon. If he removed the speculum the bleeding almost always stopped, but the speculum was always replaced to make sure that this was stopped.

DR. WM. GOODELL remarked that there was one point which Dr. Da Costa had overlooked, and that was that, in most cases, simple exposure of the cervix to the air by the speculum will cause it to become pale, although he granted that the effect was doubled by the loss of blood. He used to bleed very frequently, and occasionally still did so, but not so often as formerly, because he believed the importance of uterine congestion was overestimated. With reference to the hemorrhage, while he in a measure agreed with the last speaker, that it was not usually to be feared, yet he had a patient who bled so furiously after she reached home that she had to send for a physician to check it. On one occasion, while plunging a Battles spear, he struck a vessel of such size as to throw a stream of blood directly out of the speculum. But ordinarily the difficulty was to secure enough blood. When the punctures bled too much he touched each one with a pointed stick of lunar caustic, which never failed to stop the hemorrhage.

DR. PARISH could endorse all that Dr. Kelly had said. For a number of years he had practiced this method of depletion of the uterus, whether there was laceration or not, when the organ was in a condition of congestion. He also emphasized what had been said with reference to the relief and cure of symptoms in cases of laceration of the cervix. He had seen as a result in many of these cases a perfect union of the denuded surfaces, but a continuation of the pain and distress and frequently an increase of dysmenorrhoea. In cases where the laceration was not deep he substituted the method of local depletion, conjoined with other treatment, for the operation. He added that depletion of the cervix, and particularly of the canal, was one of the best methods of treating many cases of endometritis. He had seen sterility of eight and ten years' standing practically cured by this method of depletion.

DR. KELLY thought that $1\frac{1}{2}$ ounce of blood removed every few days was quite sufficient. In performing the depletion the patient lies on the back with either Goodell's or Nelson's speculum in place, which conducts the blood into a wide-mouthed bottle with graduated capacity. He was glad that the members had expressed themselves so freely and favorably in this matter, as these are the practical conclusions at which he had arrived.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

Sulfonal, a New Opiate—Bicarbonate of Potash in Iodoform Poisoning—Attempt to blow up a Hospital—Gluten Bread—Dwarfing by Factories and Tenements—Treatment of Spinal Abscesses—Virchow.

Professor Kast announces his discovery of a new opiate. He calls it "sulfonal" and it belongs to the group of the so-called disulphates, and in an oxidation product of the union of "achthylmerkuptan" with acetone, in crystals without taste or smell, easily dissolvable. It has the property of inducing

sleep in invalids, particularly in nervous people and those affected with heart disease, but not in healthy subjects. Prof. Kast has observed that "sulfonal" produces sleep without altering the pressure of the blood in any degree. An accident led to the discovery of the sleep producing property of "sulfonal." It had been administered to some dogs with quite a different intention and the animals first were affected as if with intoxication, and afterwards fell into a deep sleep. Experiments made on healthy persons, chiefly medical men, and then on patients in hospitals and lunatic asylums, have proved that the drug is a harmless and certain means of producing sleep in invalids.

A 20 per cent. solution of bicarbonate of potash has recently been given as an antidote in a case of severe iodoform poisoning. As the best results followed, there has been of late to look upon this salt as a direct antidote to iodoform. It would be interesting if some of the pharmaceutical chemists would investigate the action of bicarbonate of potash on iodoform.

An attempt has been made to blow up a wooden building intended as an isolatory hospital at St. George's, an extensive suburb of Bristol. There had been, it appears, a strong prejudice against the use of the site for this purpose, it being used as a playground by children. The local authorities, however, persisted. The building was erected and placed in charge of a caretaker, but no patients had yet been sent there. Upon examination immediately after the report it was found that a quantity of gunpowder had been placed under the east corner and fired with a fuse, fortunately the charge being unskillfully laid very little damage was done.

A better kind of gluten bread is now being used by invalids suffering from diabetes, it resembles ordinary bread in its general aspect, and is not unlike in taste certain kinds of cakes which are readily eaten by most people. Moreover it is easily masticated. The formula from which this new gluten bread is made is set down thus: Best quality of yeast 20 grams, cold water 120 grams, butter 125 grams, gluten flour 500 grams, and 4 eggs. For one loaf. The yeast is stirred carefully and quietly into the water, then the eggs and butter are added and the whole melted. The gluten flour is mixed in and worked up with these ingredients, and a round loaf is thus made which is about 18 inches wide and 20 inches deep, it is placed before the fire for about an hour, to cause the dough to rise and is baked in an oven heated from below. It is stated on all hands that the above is an improvement on the old kind of gluten bread which gave practitioners so much annoyance, as many patients could not eat it, and complained of its feeling like so much parchment in the mouth.

According to the annual report of the Inspector General of Recruiting, it would appear that there is no escape from the conclusion that the influence of factory and tenement is progressively dwarfing a large mass of the population. It appears that in the last year 74,991 men offered themselves for examination, 15,280 were rejected on account of bad health, 17,573 were healthy but undersized, in about 16,000 of these the defects are more precisely mentioned,

10,000 being rejected for undersized chests, 2,000 were under weight, and 4,000 under height.

Mr. Watson Cheyne, in discussing the treatment of spinal abscesses, considers three things have especially to be considered—the contents of the abscess, the wall, and the lesion of bone from which they start, although the latter cannot always be made out. Mr. Cheyne recognizes three types of tubercular abscess, (1) tubercular cavities containing soft, cheesy material, (2) tubercular sequestra, either unseparated or in cavity lined with tubercular granulations, and (3) superficial cases of bone. In the first class curvature is commonest, but the last is most extensive, and is chiefly found in adults, accompanied with abscess. The contents of these abscesses is not true pus, but broken-down cells and tissues floating in a variable amount of fluid. This fluid when inoculated produces in guinea pigs tuberculosis. The pyogenic organisms take no part in the production of the chronic abscesses, but grow freely in their unexhausted contents, consequently the entrance of putrefactive ferments into the cavities causes chronic osteomyelitis of bone. Mr. Cheyne advocates two methods of treatment, one in which the abscess was cured without opening it, and by the injection of iodoform and glycerine or iodoform dissolved in ether, and the other method by antiseptic opening. Statistics of 56 cases under his treatment, of which 73.2 per cent. healed and 12.5 died. These were mainly psoas abscesses, but dorsal, lumbar and cervical were included. Cures are most numerous between 28 and 30 years of age. The average time of healing is found to be from eight to nine months.

G. O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Diphtheritic Paralysis—Increase of Diphtheria in New York—Commencement of the College of Physicians and Surgeons.

At the last meeting of the Neurological Section of the Academy of Medicine, Dr. W. H. Thomson read an able paper on the *Clinical History, Pathology, and Etiology of Diphtheritic Paralysis*. In it he expressed the opinion that all the acute febrile diseases are accompanied by a post-latent stage, and that in diphtheria this post-latent stage is characterized by the paralytic trouble so frequently met with after an acute attack of this affection. Such paralysis he believed to be an essential part of the disease, due, in all probability, however, not to the disease itself, but to the presence in the system of certain resulting ptomaines. He thought, also, that some of the cases of diphtheritic paralysis were of peripheral, and some of central, origin.

In discussing the paper Dr. A. Jacobi said that there were undoubted cases of central origin on record, and that even a few instances of ataxia had been observed. He believed that Dr. Thomson was right in assuming that the paralysis was not to be taken as a

sequela of diphtheria, but rather as really part and parcel of the disease. If there was any affection which ran an indefinite course it certainly was diphtheria; this course sometimes being extended over many months. One difference between this and other contagious diseases was that, once having had it, the subject was all the more liable to subsequent attacks. In many cases, he believed, the repeated attacks noted simply indicated the continuous presence of the disease, which during the intervals remained hidden away in the tonsils or lymph-bodies, and was likely at any time to break forth afresh. As a rule, the paralysis first appeared in the fauces, affecting deglutition, and then successively involved the muscles of ocular accommodation and those of the extremities. Finally, there might be respiratory paralysis, which not infrequently proved fatal. This order could not, however, be relied upon in any particular instance, and in making a diagnosis in cases where there had been no throat symptoms, one of the main points to be depended upon was the fact that in diphtheritic paralysis only a comparatively small number of muscles are usually affected at the same time. Another point was the fact that the sphincter muscles are never, or almost never, involved in the paresis.

Paralysis sometimes came on during the acute stage of diphtheria. In heart failure, which was so common an occurrence in this disease, there was, no doubt, a failure of the heart nerves, either the sympathetic or the pneumogastric. This was an accident liable to occur in any case of diphtheria, and he said he had therefore always insisted on the free administration of alcoholic stimulants and cardiac tonics from the very first. After symptoms of heart trouble had once appeared it was usually too late for such remedies to be of any service. Respiratory paralysis was about as fatal as heart failure. Hence, the most energetic measures were called for to combat it, and strychnia and electricity should be pushed to the utmost extent possible.

Dr. Andrew H. Smith said it seemed to him very remarkable that we should so frequently have recovery from diphtheritic paralysis when the anatomical lesions were of so marked a character, and that the paralysis had always been somewhat of a stumbling-block to him in trying to accept the view that diphtheria is originally a merely local disease. He had no doubt that there were cases of diphtheria in which no membrane ever appeared, and the fact that instances were on record in which diphtheritic paralysis occurred without any previous throat symptoms certainly went to sustain the idea that diphtheria is essentially a general disease; while the membrane was simply an indication of it, just as the erythema of scarlatina was the outward manifestation of that disease. In scarlatina and the other exanthemata the eruption did not constitute the disease. Dr. Smith then referred to the case of a child whose mother had diphtheria in which the diphtheritic membrane appeared, not in the throat, but in the groin, where the skin had become chafed. It was also remarkable, he went on to say, that in cases of diphtheritic paralysis not preceded by the appearance of membranes in the throat the paresis usually began in the

fauces. This would seem to indicate that diphtheria had a special predilection for this region, independent of the deposit of membranes there.

Dr. L. Putzel said that he did not understand exactly what Dr. Thomson meant by the post-latent stage of diphtheria. This disease was different from scarlatina because, in scarlatinal nephritis, the bacterium which was the exciting cause of the acute affection still remained in the system. It seemed to him that the acute attack of diphtheria left the nervous system in a weakened condition, in which any slight cause might bring on paralysis. As regards the fact that the paralysis usually makes its first appearance in the fauces, the reason for this seemed to be because the throat was so markedly affected in the acute attack. As to those rare cases in which paralysis occurs without any previous local trouble, he said he was not aware that a sufficient number of these had been observed to base any conclusions upon.

Dr. Malcolm McLean described a very severe and prolonged attack of diphtheritic paralysis which occurred in his own practice a few years ago, and in which he said that more muscles and a greater extent of cutaneous surface were affected than was usual in cases which recover. It lasted for four and a half months, and involved the muscles of respiration as well as those of the throat and of both the upper and lower extremities; but did not affect the sphincters. On the fourth day of the acute attack of diphtheria which preceded the paralysis symptoms of heart failure made their appearance, and the heart continued weak throughout the course of the subsequent paralysis. On one occasion the pulse, the ordinary rate of which was 52, fell to 32 (afterwards suddenly rising for a time to 160), and this was accompanied by a most violent attack of angina pectoris, which came very near proving fatal. The practical point which Dr. McLean said he wished to impress was the necessity in such cases of the most absolute rest. In his own case faradization and galvanism were systematically employed for a long time, and in order to receive the treatment he had to be taken in a carriage to the office of the physician who applied it. Although the electricity was given with the greatest skill, however, he only grew worse, instead of better, except as regards the original paralysis of the fauces, which in time became materially relieved. At length, so great was the pain and discomfort which he suffered, that he determined to take absolute rest in bed; and as soon as he adopted this course he began to improve. He remained in bed for a month, and so satisfactory was the result that he was firmly convinced that, in these severe cases, unless this absolute rest is insisted on, no other treatment will be of any avail.

Dr. S. Seabury Jones mentioned a case of tabs dorsalis that occurred in a druggist who had received a wound in the hand while assisting in a tracheotomy performed on a diphtheritic patient; the paralysis commencing in the injured hand. In such cases, according to Trousseau, the paralysis sometimes, however, attacked the throat first. He then referred to a case in which the trouble resembled bulbar paral-

ysis, although a good recovery was made under the use of strychnia and iron. In this case the patient was a woman who nursed her child through diphtheria, but, as far as could be ascertained, did not have any membranes herself, although she complained of sore throat at the time. Trousseau, he said, had long ago described in the most admirable manner all the varieties and characteristics of diphtheritic paralysis, and there was no question in his own mind that the lesion in this affection might be either central or peripheral.

The chairman of the Section, Dr. W. R. Birdsall, said that as regards the pathology of diphtheritic paralysis he also believed that, while in many instances there was simply a neuritis, cases of undoubted central origin sometimes occurred. In the latter, however, the central lesion was apt to give rise also to peripheral degeneration. In adults diphtheritic paralysis was relatively more common than in children, and it very often occurred in cases in which the original attack of diphtheria was very light. As to the matter of heart failure, it was a question, he thought, whether the trouble was of the same nature as the paralysis noted after the acute attack, or was merely functional in character; and a point against its paralytic origin was the early stage at which it occurred. As regards the etiology of diphtheritic paralysis, it seemed to him entirely possible that it might be due to the original poison which caused the acute attack of the disease; the delay in its appearance being perhaps attributable to the comparatively long time which it takes for such toxic agents to act upon the nervous system.

In bringing the discussion to a close Dr. Thomson said that he had purposely refrained from taking up the subject of heart failure in the paper, for the reason that it was attended with so many complicating circumstances. He doubted very much, however, whether it was due to the same cause as the later paralyzes. In many instances he believed that myocarditis existed, and it seemed altogether probable that this was the fact, from the description given, in Dr. McLean's case. He had not touched upon the matter of therapeutics in the paper; but he quite agreed with Dr. McLean that electricity was of no value in diphtheritic paralysis. It was highly desirable, he said, to stimulate the peripheral extremities of the nerves, and this could best be accomplished by applying to the throat equal parts of honey and black pepper. In paralysis of the extremities a solution of pepper (1 drachm to the pint) was also a useful local application. As to Dr. Putzel's criticism of his so-called post-latent period of diphtheria, Dr. Thomson said that the paralysis was to him an indication of certain processes going on subsequently to the acute stage, and that he could but again express his conviction that a similar post-latent stage was characteristic of all the acute fevers. This post-latent stage varied in its manifestations in the different diseases, and it seemed highly probable that its phenomena were due to the action of ptomaines.

The increase of diphtheria in this city of late years is clearly shown in some statistics recently published by the Health Department. From these it appears

that during the ten years from 1868 to 1878 there were 1,488 deaths reported from diphtheria and croup, and during the ten years from 1878 to 1888, 2,295; the percentage of the total death-rate of the city being 1.52 in the former decade, and 1.72 in the latter.

The first Commencement of the College of Physicians and Surgeons in its new buildings was held May 10, when a class of 120 was graduated. On this occasion the first Harsen prize (\$500), for the best examination in all the branches of study, was awarded to a son of Professor Henry B. Sands.

The New York Medico-Legal Society has begun to make preparations for an International Congress of Medical Jurisprudence to be held in this city in June, 1889.

P. P. P.

CINCINNATI LETTER.

Report of the Cincinnati Hospital; Mortality from Typhoid Fever and Sunstroke—Symptoms in Typhoid Cases—Complications in Acute Rheumatism—Hemiplegia—Phthisis—Complications in Bright's Disease—Injuries followed by Tetanus—Obstetrical Statistics—Death of Eminent Medical Men—Dr. C. D. Palmer.

The twenty-seventh annual report of the Cincinnati Hospital has just been issued, and it is the best report that has ever been issued from that institution. It gives evidence of much care in its arrangement and painstaking in the material selected for publication. The following quotation from the report of the medical staff will suffice to show where a large part of the credit for the admirable report belongs: "All of these cases have been carefully classified according to the nomenclature of the Royal College of Physicians of London, 1885, in a very extended form, by Mr. P. Alfred Marchand, Registrar to the Staff, and it is hoped it will be regarded as an important contribution to the statistics of the general hospitals of the world."

In a previous letter it was mentioned that the clinical and Pathological School of the Cincinnati Hospital had become a department of the University of Cincinnati; and the report, in speaking of the union, says: "The organization authorized by your Board of the Staff Service, under the title of the Clinical and Pathological School of the Cincinnati Hospital, and its union with the Medical Department of the University of Cincinnati, has been most successfully accomplished, and as one result the number of students attending the course of clinical lectures has doubled, and thereby the income for the support of the Library and Pathological Museum has been increased by \$1000."

The total number of patients treated during the year amounted to 4,027, of whom 352 died; thus making a death-rate of 8.3 per cent. The death-rate for the previous year, ending Dec. 31, 1886, was 8½ per cent. From this it appears that the death-rate for the year 1887 is ⅓ per cent. higher than that of the preceding year.

The increased mortality may be largely explained, however, by a reference to the table of diseases. Here we find recorded 34 deaths from typhoid fever,

and 16 from sunstroke. The large number of these cases that occurred during the year, and their mortality will be amply sufficient to account for the slightly higher death rate.

The mortality from typhoid fever was 16.25 per cent. Thirty-four out of 209 cases terminated fatally. This mortality is not excessive for hospital cases, for a considerable proportion of the fatal cases were moribund when admitted. The type of typhoid fever that prevailed here during the early winter months was mild, and this factor must enter into consideration as helping to explain the low mortality.

The total number of medical cases treated during the year amounted to 1,937, of surgical, 1,509; ophthalmological 206, and obstetrical and gynecological 390. The average number of days of each patient's stay in the hospital was for medical patients 17.58 days; surgical 30.31 days; ophthalmological 51 days, and obstetrical and gynecological 30.19.

Some observations of interest as regards the symptoms and complications of particular diseases are also set forth in the report. For instance, in typhoid fever cases we learn that 152 out of 209 cases occurred in males. Diarrhea was present in 78 of these cases; 37 had vomiting; 46 had cough; 37 had vomiting; 46 had cough; 35 had delirium (an unusually small proportion); 50 had sweating; 18 had epistaxis; 60 had rose-spots; 72 had gurgling; 52 had tympanitis; the highest pulse was 180; highest temperature 113.5 (?). Of the females, 23 had diarrhea; 24 had vomiting; 18 had cough; 8 were delirious; 13 had sweating; 7 had epistaxis; 22 had rose-spots; 25 had gurgling; 17 had tympanitis. The highest pulse was 190; temperature 105.4. One had perforation of the intestines; 2 had intestinal hæmorrhage; 1 had peritonitis; 1 had phlebitis; and 1 had diphtheria.

In the cases of acute rheumatism treated the following complications were noted: Twenty-eight had mitral insufficiency; 1 had chronic alcoholism; 1 had aortic insufficiency; 1 had erysipelas; 4 had mitral stenosis; 1 had mitral insufficiency, aortic stenosis and insufficiency; 2 had aortic stenosis; 1 had mitral stenosis and insufficiency; 1 had pleuritic effusion.

Seven cases suffering with hemiplegia had syphilis and one had syphilitic cerebral thrombosis. One case of chorea was complicated by subacute rheumatism.

Among the phthisical cases there were found two who also had mitral insufficiency. This combination, is uncommon, but that valvular disease of the heart does sometime coexist with phthisis is proven by these statistics.

The complications noted as being found with Bright's disease are the following: Two had œdema of the brain and mitral insufficiency; 1 had acute gastritis; 1 had tuberculosis; 2 had valvular disease of the heart; 2 had erysipelas, developed in the hospital; 1 had phthisis; 1 had mitral stenosis; 1 had delirium tremens, and 1 had mitral insufficiency.

A very interesting portion of the report is that devoted to the details of treatment adopted by each

member of the Staff in typhoid cases. These reports are well written and carefully prepared, so that one can very profitably read them carefully, and perhaps obtain some ideas that may be of future service.

A feature of the surgical report that is at very great variance with the reports published abroad is in regard to character of injuries followed by tetanus. Nicolaïer and Rosback in some statistics showed that tetanus usually, in fact almost always, occurred in cases in which the lower extremities were the seat of wounds, and from this fact argued that the bacillus of tetanus was found in the earth; this report shows that the cases in which tetanus developed were confined exclusively to injuries of the hand and arm; thus one had a laceration of the hand; one had a lacerated wound of the index-finger, and one had a mashed hand.

The appendix to the obstetrical report furnishes some very interesting features, which will probably be of interest to many readers. There were 234 women delivered during the year; about 65 per cent. of whom were primiparæ; 20 per cent. were multiparæ; 1 had twelve previous pregnancies. The average age of the primiparæ was 21 years and 10 months. The youngest primiparæ was 16; the oldest 37. The average age of the multiparæ was 25 years and 10 months. The youngest multiparæ was 17 and the oldest 42.

Average duration of labor.—Primiparæ: 1st stage 16 hours, 10 minutes; 2d stage 2' 20"; 3d stage 14'. Multiparæ: 1st stage, 10' 15"; 2d stage, 2' 18"; 3d stage 12".

Presentations.—Primiparæ: vertex, 147; breech 6. Multiparæ: vertex 75; face 2; breech 3; footling 1.

Positions.—Primiparæ: S. O. A., 95; R. O. A., 45; R. O. P., 3; S. D. A., 4; R. D. P., 1; R. D. A., 2; unknown 3.

Sex of children.—Primiparæ gave birth to 75 male and 75 female children; multiparæ to 45 male and 37 female. In two cases of twins both were females. Primiparæ: male children weighed 7 $\frac{2}{3}$ pounds, and were 18 $\frac{1}{4}$ inches in length; female, weight 7 pounds and length 18 inches. Multiparæ: male, weight 7 pounds, 4 oz., and length, 16 inches; females, weight 7 pounds, 4 oz., and length 18 inches.

The heaviest male child 12 $\frac{1}{4}$ pounds, the lightest 3 pounds; female, heaviest 10 pounds, lightest 3 $\frac{1}{2}$ pounds. Premature labor occurred in 10 cases.

These extracts from the report will serve to give a fair idea of the work of the past year, as well as to indicate the fact that much credit is due the resident physicians for their careful and painstaking preparation of the clinical histories.

During the past year the local profession has been singularly unfortunate in losing the services of four valuable members. Drs. Dun, Heighway Muscroft and Aub have been called away, and Dr. C. D. Palmer met with an accident, which to say the least, will incapacitate him for a considerable space of time. As these are all men who were prominent in medical work, men possessed of large experience and liberal views, it will be found a very difficult matter to fill their places.

L. C. O.

POTASSIUM PERMANGANATE IN ANTHRAX AND FURUNCLE.

Dear Sir:—Further experiment with this salt on the line indicated in my communication some months since warrants me in announcing it as a veritable specific against many phlegmonous lesions.

The strength of the solution employed is usually about gr. x-5j of distilled water, though a much stronger preparation may be used with safety. With a cotton-tipped probe or hypodermic syringe attempts should be made to reach the *fons d'origo mali*. A few drops thus brought into contact with the cone of a recent boil will, in a majority of instances, abort it. Or if the furuncle be already opened and suppurating, its tedious progress may be materially abridged by daily saturating the cone and its surroundings with the solution.

If, on the other hand, we have a carbuncle to contend with, its focus of inflammation may be reached through one or more of the cribriform avenues, the site of which can be made out even before pus has appeared on the surface.

Within the present month I have cured two large carbuncles, which involved the nuchal regions of two elderly men. In one case the induration extended to the spine of the scapula on one side and for several inches on the other. Neither of the gentlemen had been free from acute pain nor slept for more than forty-eight hours. I described to them the new treatment but, recognizing the importance of prompt action, advised immediate and full incision. Each of the two chose to try the new remedy first, and it was so done. The result, as shown on the following day, was all that could be desired; rest had been secured, and the entire aspect of affairs had changed for the better. The dressing employed, meanwhile, was a lead and opium, or permanganate, lotion covered with oil silk. Tonic treatment was advised rather as a prophylactic, for the treatment of neither case occupied a week.

Phlegmonous erysipelas is so rarely seen here that I may never have an opportunity to test the remedy in that direction, but I suggest that the inflamed area be circumscribed or environed by a series of deep injections, with a superficial dressing of the same. I should certainly expect to arrest the disease. Let us hope that some of your readers will test the process and report. C. M. FENN, M.D.

San Diego, Cal.

RAILWAY INJURY OF NECK, WITH FRACTURE OF HYOID BONE.

Dear Sir:—Mr. T., on May 4, while at work in the mine was caught between a car and the roof. When called to see him I found marks behind the ears which looked very much as if the man had been hung. On examination of the anterior right side of the neck found a large wound made by an iron on the car. The œsophagus and trachea were exposed from the cricoid to above the larynx bone. The piece seemed to have passed behind the anterior tissues nearly through from right to left. The thyroid

cartilage was considerably bruised and the hyoid bone was completely severed just to the right of the centre.

It was a question how to hold the ends of bone together, I having no silver wire and could get none in the city. The patient could swallow only with the greatest difficulty, and in the recumbent position breathing was difficult. I concluded to try silk. I first put a stitch below each piece, which were separated about one-half inch, and thus brought the ends nearly into position; I then passed a large silk thread through the pieces and was then enabled to get good opposition. The wound was then closed and the ends of thread brought to the lowest point. It healed nicely. In a few days the lowest thread came away, and to-day, three weeks after, the one through the bone was removed.

For the first two days there was considerable rise of temperature, but that subsided under treatment and the man made a good recovery.

C. W. HAWLEY, M.D.

Streator, Ill., June 6, 1888.

"ELEVATING THE STANDARD," AND HOW EASY IT IS DONE.

Dear Sir:—Aside from the plain proposition that the elevation of any standard is the duty of the one bearing it—the method so long discussed—of its application to the proper qualification of students entering medicine—is no less simple. Exactly as the terse rule "that the proper way to resume specie payment, was to resume specie payment," solved a great financial problem. So does the above A B C method settle this old question of an over-crowded profession by unqualified members. Witness the proof. During the past year the writer has received from three young men, applications as office students. Although each applicant was bright, ambitious, and in a general sense promising, it was only requisite to state to the candidate the preliminary qualifications required by schools of the highest standard, to convince them that they could not enter. One is now equipping himself wherein he was deficient, and the other two have entered vocations the demands of which they are amply qualified to meet, as proven by success and satisfaction already attained.

Here, Mr. Editor, are two young men rescued from a life struggle with semi-starvation, a profession slightly relieved, and the world at large benefitted. The way to resume is to *resume*, and the way to elevate the standard of medical acquirement is for the colleges to elevate it. H. C. MARKHAM, M.D.

Independence, Iowa.

NECROLOGY.

THE DEATH OF DR. EDWARD S. DUNSTER.

WHEREAS, It has pleased Almighty God to remove from his earthly sphere our worthy companion and professional brother, Dr. Edward S. Dunster, of Ann Arbor, Mich., therefore, be it

Resolved, That we as a Society tender to his grief-stricken family our heartfelt sympathies.

To the profession before whom he has appeared so eloquent in address, logical in his reasoning, honest in his opinions, which he maintained with his utmost power, and above all, his loyalty to his profession he so dearly loved, and for whose best interests he so long and sedulously labored, we can only say that the loss of one so eminent can ill be told in resolutions or words; in this the heart alone can speak.

In obedience to the Almighty power that rules the destinies of men, that can build up or cast down, that can give or take away, we bow in humble submission about the bier of our departed friend, fellow-member and professional brother. Be it further

Resolved, That our Secretary transmit a copy of these resolutions to the press and to the family.

WM. BRODIE, M.D.,

HAL C. WYMAN, M.D.,

C. HENRI LEONARD, M.D.,

Committee.

Office of the Sec'y of the Wayne Co. Medical Society, Detroit,
May 4, 1888.

BOOK REVIEWS.

THE SURGICAL DISEASES OF THE GENITO-URINARY ORGANS, INCLUDING SYPHILIS. By E. L. KEYS, A.M., M.D., etc. A Revision of Van Buren and Keys' Text-book upon the same subjects. 8vo, pp. xv, 704. New York: D. Appleton & Co. 1888. Chicago: A. C. McClurg & Co.

Since the appearance, in 1874, of the original treatise upon which this revision is founded there have been many changes and much progress in the surgery of the genito-urinary organs: litholapaxy has had its birth and development, supra-pubic cystotomy has received new study and attention, new methods of exploring and operating upon the bladder have been studied and brought to some degree of perfection, the surgery of the kidney has been reconstructed, as has been, to a great extent, that of the tunica vaginalis and of varicocele, and our therapeutic resources in syphilis have been added to and greatly strengthened. It is to be expected, therefore, that this revision differs much and in many particulars from the work of 1874—and such is the case. The book has been entirely recast. The clinical cases of the original work have been omitted in order to make room for new matter.

Masterly as is the book there are in it, in our opinion, two serious defects: there is not one word in it, so far as we have been able to discover, concerning the treatment of stricture of the urethra by electrolysis; and the subcutaneous use of mercury in syphilis is dismissed in a paragraph as being scarcely worthy of consideration. We can but think that the failure to even mention electrolysis was due to inadvertence—surely it could not have been intentional. Whatever may be the future estimate of the value of electrolysis in the treatment of certain cases of stricture of the urethra, the statistics now at hand show that the method is at least worthy of mention by the author of a work of this kind—whatever be his indi-

vidual opinion on the subject. It is the duty of the author of a scientific work to present facts as they are, not as he wishes they were—and we believe that Dr. Keys, writing to present facts as they are, or as he thinks they are, must have overlooked the subject of electrolysis.

As a whole the book is one that will bear the closest study, and is entitled to the same high rank in medical literature that was given the original work.

THE PHYSICIAN'S BEDSIDE RECORD. The Pimpton Mfg. Co., Hartford, Conn.

This was designed for the purpose of keeping a permanent record of the clinical features of disease, recorded at the patient's bedside. It comprises a page for the preliminary history of the case; twenty-eight pages for the recording of as many days' observations, ruled one line for each hour of the day, with spaces for pulse, temperature, respiration, medicine, notes of nurse, and directions and notes of physician; following these are three closely ruled pages for the physician's notes or history of the case; and concluding, there is a chart for a tracing of the pulse, temperature and respiration, showing at a glance the variation for each day of the disease.

While most physicians probably have a method of their own for case-taking, this pamphlet book will prove exceedingly useful, especially for the preservation of records of cases of protracted illness, as of typhoid fever, etc. If by its convenience it encourages more universal case recording, it will accomplish much good.

MEDICAL PUBLICATIONS, HARVARD MEDICAL SCHOOL.

This is a neatly bound volume comprising papers upon medical subjects that have been written during the year 1887 by the Faculty and instructors of Harvard Medical College. The papers as they appear here are reprints from various periodicals that have been collected and bound together. The subject-matter of each is interesting, and only articles of originality have been admitted to the collection.

MISCELLANEOUS.

ASSOCIATION OF AMERICAN INSTITUTIONS FOR IDIOTIC AND FEEBLE-MINDED PERSONS.—The twelfth annual session will commence at the Rossin House, Toronto, Canada, on Monday, June 18, at 3 o'clock, P.M., moving to Orillia on the following morning. By resolutions of previous sessions, the following reports will be called for: "On Causation of Idiocy, etc." Superintendents reporting from their earliest received cases. (min. p. 23.) "On Status of the work before the people and legislatures of the various States." (min. p. 43.) "On Development and Progress of the Institutions represented." "Improvements in School Training and Hospital Care introduced during the past year." "Clinical reports of special cases." (min. p. 41.)

The following papers have been promised:

1. The Annual Address, by Dr. George H. Knight, of Lakeville, Conn.
2. "Clinical Notes on 'Mongolian' Idiocy, and pathological examination of two cases," by Dr. A. W. Wilmarth, of Elwyn, Penna.
3. "Special treatment of Paralytic and Epileptic Idiocy," by Dr. A. E. Osborne, of Santa Clara, Cal.

4. "Industrial Education at the Kentucky Institution," by Dr. J. Q. A. Stewart, of Frankfort, Ky.
5. "Kindergarten for Feeble-minded Children," by Dr. S. J. Fort, of Elliptic City, Md.
6. "A study of twenty cases of Hemiplegic Idiocy, at Elwyn," by Prof. Wm. Osler, of Philadelphia, Penna.
7. "Notes on Examination of Eyes, at Elwyn," by Dr. Chas. Oliver, of Philadelphia.
8. "What is meant by Physiological Education," by Dr. Isaac N. Kerlin, Elwyn, Penna.
9. "The present condition of the Education of Imbeciles in Great Britain," by George E. Shuttleworth, M.D., Royal Albert Asylum, Lancaster, England.

ISAAC N. KERLIN, *Secretary*.

Elwyn, Penna., June 1, 1888.

THE LATE DR. A. B. PALMER.—The following resolutions were adopted at a meeting of the Executive Committee of the Ninth International Medical Congress, held at Cincinnati, May 9, 1888:

Resolved, That this Committee desire to place on record its sense of profound sorrow at the death of our late associate, Dr. A. B. Palmer.

Resolved, That we, in common with his professional brethren throughout the country, deplore the loss of so gifted and zealous a laborer in the cause of medical science, whose brilliant achievements during a long and useful professional life was fully supplemented by his many private virtues.

Resolved, That we extend to his bereaved family our sympathy and sincere condolence.

CHICAGO MEDICO-LEGAL SOCIETY.—At the annual meeting of the Chicago Medico-Legal Society, held June 2, 1888, the following gentlemen were elected officers for the ensuing year:

President, Dr. E. J. Doering.
First Vice-President, Dr. Boerne Bettman.
Second Vice-President, Eric Winters, Esq.
Treasurer, Dr. L. L. McArthur.
Secretary, Dr. Scott Helm.

THE NATIONAL ASSOCIATION OF RAILWAY SURGEONS will hold its first meeting in the city of Chicago, in Parlor O of the Palmer House, June 28, 1888, commencing at 9:30 A.M. Every surgeon who is in the employ of any railway company is invited to this meeting. For further information apply to the Chairman of the Committee of Arrangements, Dr. C. B. Stenen, Ft. Wayne, Indiana.

INDIANA STATE MEDICAL SOCIETY.—At the annual meeting in Indianapolis, June 6, 1888, the following officers were elected for the ensuing year: *President*, Wm. H. Wishard, M.D., Indianapolis; *Vice-President*, Albert G. Porter, M.D., Lebanon; *Treasurer*, C. B. Higgins, M.D., Peru; *Secretary*, E. S. Elder, M.D., Indianapolis; *Assistant Secretary*, C. H. Light, M.D., Madison.

NEW YORK STATE MEDICAL ASSOCIATION.—*Fifth District Branch*, will hold its sixth special meeting at Babylon, Suffolk Co., N. Y., on Tuesday, July 31, 1888. E. H. Squibb, M.D., Brooklyn, Secretary.

THE MITCHELL DISTRICT MEDICAL SOCIETY will hold its semi-annual meeting at the French Lick Springs, Indiana, June 21, 22 and 23, 1888, commencing at 10:30 A.M.

NEW YORK STATE MEDICAL ASSOCIATION.—The Third District Branch will hold its fourth annual meeting in Odd Fellows' Hall, Norwich, Chenango Co., N. Y., Thursday, June 21, 1888, commencing at 10 A.M.

NEW BOOKS RECEIVED.

Inebriety, by Norman Kerr, M.D. Philadelphia: P. Blakiston, Son & Co.
 Abdominal Surgery, by J. Gerig Smith. Second edition. Philadelphia: P. Blakiston, Son & Co.
 The Physician's Leisure Library, No. 9. The Infectious Diseases, by Karl Liebermeister, Vol. II. Detroit: Geo. S. Davis.

The Language of Medicine, a manual giving the origin, etymology, pronunciation and meaning of the technical terms found in medical literature, by F. K. Campbell, M.D., A.M. New York: D. Appleton & Co.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MAY 26, 1888, TO JUNE 8, 1888.

Major Robert H. White, Surgeon, will report to regimental commander First Infantry, to accompany Hdqrs. Field, Staff, Band, and battalion of First Infantry to Santa Barbara, Cal., on or about June 15, 1888, to remain until about September 1, 1888. S. O. 25, Div. Pacific, May 28, 1888.

Capt. S. G. Cowdry, Asst. Surgeon, ordered to accompany the troops of the Sixteenth Infantry from Ft. Bliss, Tex., to Ft. Douglas, U. T., as medical officer. Will return to his station upon the completion of said duty. S. O. 54, Dept. Texas, May 19, 1888.

Capt. D. M. Appel, Asst. Surgeon, upon arrival of Capt. J. V. Lauderdale, Asst. Surgeon, at Ft. Davis, will proceed to Camp Pena Colorado, Texas, for temporary duty at that camp, and upon return of First Lieut. H. S. T. Harris, Asst. Surgeon, to Camp Pena Colorado, Asst. Surgeon Appel will return to Ft. Davis. S. O. 57, Dept. Texas, May 28, 1888.

First Lieut. J. R. Kean, Asst. Surgeon, will accompany Troop C, Ninth Cavalry, from Ft. Robinson, Neb., to Ft. DuChesne, Utah, and return with Troop B, Ninth Cavalry, to Ft. Robinson. S. O. 39, Dept. Platte, May 19, 1888.

First Lieut. E. K. Morris, Asst. Surgeon, granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 61, Dept. Ariz., May 28, 1888.

Capt. James A. Finley, Asst. Surgeon, granted leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Div. of the Missouri. S. O. 129, A. G. O., June 5, 1888.

Capt. Robt. B. Benham, Asst. Surgeon, is relieved from duty at Ft. DuChesne, Utah, to take effect upon completion of the duty assigned him in par. 2, S. O. 33, c. s., Dept. Platte, and will then proceed to Ft. Laramie, Wyo., reporting to the commanding officer for duty at that post. S. O. 44, Dept. Platte, June 4, 1888.

First Lieut. James E. Pilcher, Asst. Surgeon, detailed as member of board of medical officers appointed by S. O. 108, A. G. O., May 10, 1888, to meet at U. S. Military Academy, West Point, N. Y., to examine candidates for admission to the Academy, etc., vice Major Robert M. O'Reilly, Surgeon, relieved. S. O. 128, A. G. O., June 4, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 9, 1888.

Surgeon A. F. Magruder, detached from the "Yantic" and granted sick leave.

Medical Inspector N. L. Bates, ordered to the "Richmond." Medical Inspector B. F. Kidder, detached from the "Richmond" and wait orders.

Surgeon B. F. MacIsaac, detached from Naval Examining Board preparatory to sea service.

Surgeon T. C. Heyl, ordered to the receiving ship "St. Louis." Surgeon T. H. Streeter, from "St. Louis" and to Medical Examining Board as recorder.

P. A. Surgeon W. R. DuBose, from Naval Hospital, Norfolk, and to the "Jamestown."

P. A. Surgeon Howard Wells, from the "Jamestown" and to Naval Hospital, Chelsea.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JUNE 9, 1888.

Surgeon P. H. Bailhache, detailed as chairman Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

Surgeon C. S. D. Fessenden, detailed as member Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

Surgeon George Purviance, detailed as recorder Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

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No. 25

ADDRESS IN OPHTHALMOLOGY.

THE TENDENCY OF MODERN OPHTHALMOLOGY.

Delivered at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 9, 1888.

BY F. C. HOTZ, M.D.,

OF CHICAGO, ILL.

CHAIRMAN OF THE SECTION OF OPHTHALMOLOGY.

There are times in medical science when opinions and doctrines show a remarkable oscillatory motion, swinging like a pendulum forward and backward, sometimes to come back to the point from which they had started out many years ago. This unsteady movement makes it very difficult, if not impossible, to determine whether any real progress has been made within a short period.

One of the most remarkable instances of the unstable nature of medical opinions is furnished us by the history of the cataract operations since 1860. At that time the corneal flap operation reigned supreme. But when von Graefe published, in 1865, his "Modified Linear Extraction," and demonstrated its superiority over the older method by a marked decrease in the percentage of failures, his operation quickly gained favor with the ophthalmic surgeons and entered on a triumphant march over the world, which is only eclipsed by the phenomenal rapidity with which cocaine in our days conquered the medical profession of all nations. In a few years Graefe's operation had superseded the flap operation so completely that the younger generation of oculists know the latter only from books; and in the course of two decades the superiority of Graefe's method, proven in thousands upon thousands of cases, seemed so firmly established that we all were thoroughly convinced it marked a decided and important progress in ophthalmic surgery. And to-day—what do we see to-day? In all ophthalmological journals and societies voices are loudly urging the return to the corneal flap operation. In the Ophthalmological Section of the last International Congress this question excited a very animated discussion; and almost at the same time the same question was brought up before the German oculists in Heidelberg by Prof. Schweigger, of Berlin (Graefe's successor!), who expressed himself unreservedly in favor of the corneal flap operation. We cannot close our eyes to the fact that this reaction has already assumed a formidable size; and well may we ask, "Is the pendulum bound to swing back to where it stood thirty years ago?"

If newness and progress were identical in medical matters we could easily measure the advancement made in each successive year; and it would be an easy task for your chairman to carry out the dictates of the By-laws of our Association, which charge him "to prepare an address on the recent advancements in the branches belonging to his Section." But real progress in medical science is of an exceedingly slow growth; slowly old views are modified and new theories evolved; and when they have taken form and flesh they have to stand the crucial tests of long-continued clinical observations before they can be accepted as an improvement or advance.

This slow process of cleaning the chaff from the wheat renders it manifestly impracticable to measure the advancement in medicine by the year; and I therefore ask for your kind indulgence if, instead of undertaking the impossible task of determining the progress made in ophthalmology, otology and laryngology during the past year, I have chosen for the subject of this address some considerations regarding

THE TENDENCY OF MODERN OPHTHALMOLOGY IN ITS RELATIONS TO GENERAL MEDICINE.

When Graefe began his reformatory work, ophthalmology, like the rest of medical science, was still largely permeated by the doctrine of "dyscrasies." The most affections of the eye were regarded and treated as manifestations of a general dyscrasia or impure state of the blood. Constitutional treatment received the principal attention; local remedies were considered of little consequence. Physicians had a holy horror of opening by daylight the eyes of children afflicted with the so-called "scrofulous ophthalmia;" they thought it not only inexpedient but unnecessary to examine such eyes every day.

Graefe, in his travels, had been thoroughly convinced of the shortcomings of this therapy, and it was clear to his mind that the only trustworthy foundation for a rational and successful therapy was a thorough knowledge of the pathological changes which take place in the tissues of the eye in disease. From the beginning of his practice to his last day he emphasized the paramount importance of daily examination and accuracy in observation. Upon this basis he built up his methods of local treatment and demonstrated by his brilliant success their superiority over the irrational therapy of the past.

But the great stress which in Graefe's clinic was laid upon local treatment very soon created in medical circles the impression that Graefe and his pupils were inclined to rely upon local medication exclu-

sively, and to pay no attention to constitutional or other diseases which possibly might influence the ocular affection. And it came to be generally believed that modern ophthalmology was so exclusive a specialty that it had no interest in or connection with general medicine.

Nothing could be more erroneous than this idea. Every leaf of the ophthalmological literature bears witness that modern ophthalmology is striving incessantly to establish the closest connection with general medicine by investigating the relations which exist between the ocular diseases and the maladies of the whole human body.

In solving this great problem ophthalmology is endeavoring to answer these two questions:

1. What effect have constitutional and organic diseases upon the eye?
2. What influence have morbid disturbances in the eye upon other parts of the body?

Many are the valuable contributions made by ophthalmologists to our knowledge of the etiological dependence of ocular affections from organic or systemic diseases, especially since the ophthalmoscope has greatly widened the field of these investigations. In 1856 already Dr. M. Heyman, of Dresden, recognized and described the characteristic pathological changes in the retina associated with Bright's disease of the kidneys. Diabetes was found not only to disturb the lens, but also to cause iritis and choroiditis; and leukaemia is now known to induce peculiar lesions in the retina. Numerous observations have been recorded of the influence of cerebral and spinal affections on the visual organs, and of the effect of tobacco, alcohol, quinine, lead and other poisons. Uterine disorders have been found a prolific source of ocular neuroses, and diphtheria a cause of paralytic affections; not to speak of innumerable new facts discovered in regard to the etiological connection of gout, rheumatism, syphilis and malaria with ocular diseases.

It would be impossible in this short address to give a full list of all the work which has recently been done in this direction. But even these few instances are sufficient to show that modern ophthalmology, far from ignoring the vital connection of the eye with the rest of the body, has been studiously at work to gain a better understanding of this relation on the basis of accurate clinical observations.

Nor has it escaped the notice of observant oculists that ocular diseases sometimes exert a grave influence upon the whole organism or its several parts. The febrile excitation in panophthalmitis; the violent headache in cyclitis; the terrible paroxysms of neuralgia, nausea and vomiting in acute glaucoma; the giddiness in slight paresis of ocular muscles—these and similar facts prove the diseased eyeball can exert a disturbing influence which may reach far beyond its immediate vicinity.

And here is the point where ophthalmology comes into the closest contact with general medicine, since it has directed the latter's attention to the eye as the possible cause of many nervous disorders. It has long been known to oculists that among the complaints of asthenopic patients periodic headache, diz-

ziness, nausea or a sensation of weariness are very common, and that all these symptoms are relieved by the glasses which correct the visual difficulty. The fact thus proven, that eye-strain is capable of seriously affecting the nervous system, logically leads to the inquiry whether the same cause may not be operative in many cases of neurotic affections where the patients do not show any *manifest* visual disturbance. Clinical observations on a large scale alone can decide this question. And preëminent among those oculists who have undertaken this task, stands Dr. Geo. T. Stevens, of New York, who during a series of years has carefully examined the visual functions of a great number of patients suffering from the various forms of nervous disorders, and also carefully studied the effect the correction of visual difficulties—where any were found—had upon the exciting nervous disturbance. The recently published records of his researches¹ are highly interesting reading not only for the oculist and neurologist, but for every physician; and it is a task worthy the combined efforts of physicians and oculists to ascertain whether Dr. Stevens is right or wrong in declaring "difficulties attending the functions of accommodating and of adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and more frequently than other conditions constitute a neuropathic tendency." If these views be confirmed by further clinical observations, ophthalmology would most assuredly have rendered invaluable services to general medicine by disclosing a way of relieving many common and heretofore often intractable nervous affections.

Gentlemen: From a multitude of evidences contained in the records of modern ophthalmology I have selected but a few which truthfully reflect the spirit of this specialty. I wished to show that its attention and interest are not confined to the narrow anatomical limits of the visual organ; that its tendency is to widen the field of its usefulness and to contribute its share to the advancement of medical science by solving the highly interesting problems of the mutual influence of the body upon the eye and *vice versa*. Much has already been done, but much more, undoubtedly, could have been accomplished, had ophthalmology in these efforts been generously assisted by the medical profession. But it cannot be denied that general medicine has, for a long time, shown a strange indifference to ophthalmology. Do you ask for evidence? Look in your medical textbooks and see how little notice is taken of the most important discoveries in regard to the influence of general diseases upon the eye. Look at your medical colleges. Not one of them regards the study of ophthalmology as important enough for medical students to make the attendance of eye clinics obligatory. Ask your clinical teachers, and they will tell you the interest medical students and physicians take in ophthalmology is exceedingly low if gauged by the number of attendants at the eye clinics.

Thus ignored by general medicine and divorced by

¹Functional Nervous Disorders; their Causes and Treatment. By Geo. T. Stevens, M.D. New York, 1887.

its rapid growth from surgery, ophthalmology has been forced into an isolated position never sought by it; for, in the great task it has set before itself to solve, ophthalmology appreciates too well the importance of the closest intercommunication and the active coöperation with all the other sections of medical science.

The great diversity of the scientific work to be done by each branch necessitates the division of this Association into Sections. But, while each Section should have its own organization and the privilege to carry out its work in its own way, we do not propose to sever our connection with the Association by establishing a special society; but, realizing the great mutual benefit coming from personal contact of the workers of the different Sections, we shall always bear in mind that one common interest binds all Sections together; they belong together, they can profit from each other, and they shall meet and work together for the advancement of the science and art of medicine.

ORIGINAL ARTICLES.

RECTAL INSUFFLATION OF HYDROGEN GAS AN INFALLIBLE TEST IN THE DIAGNOSIS OF VISCERAL INJURY OF THE GASTRO-INTESTINAL CANAL IN PENETRATING WOUNDS OF THE ABDOMEN.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 9, 1888, and illustrated by three experiments on dogs.

BY N. SENN, M.D., Ph.D.,

ATTENDING SURGEON TO THE MILWAUKEE HOSPITAL, PROFESSOR OF PRINCIPLES OF SURGERY AND SURGICAL PATHOLOGY IN THE RUSH MEDICAL COLLEGE, CHICAGO, ILL.

The operative treatment of penetrating wounds of the abdomen complicated by visceral injury of the gastro-intestinal canal is now sanctioned by the best surgical authorities, and may be considered as a well established procedure, based as it is upon the results of experimentation and clinical experience. A visceral wound of the stomach or any portion of the intestinal canal sufficient in size to give rise to extravasation into the peritoneal cavity must be looked upon as a mortal injury unless promptly treated by abdominal section. A number of well authenticated cases are on record where a wound in the stomach or the large intestine healed and the patients recovered without the intervention of surgery, but these instances are so few that, practically, the force of the preceding statement remains unimpaired. After a careful study of an immense clinical material Otis came to the important conclusion that gunshot injuries of the small intestines under the old expectant treatment without exception resulted in death, and this is a sufficiently cogent argument in favor of their treatment by laparotomy as affording the only chance of recovery.

The great difficulty that presents itself to the surgeon in the absence of positive symptoms is the differential diagnosis between a simple penetrating

wound and a penetrating wound complicated by injury of the gastro-intestinal canal. While the existence of serious intra-abdominal hæmorrhage can usually be readily recognized by well-marked physical signs and a complexus of symptoms which points to sudden diminution of intra-arterial pressure, and thus furnishes one of the positive indications for treatment by laparotomy, the well-known fact remains that a visceral injury of the stomach or intestines seldom gives rise to symptoms upon which the surgeon could rely in making a positive diagnosis.

In the treatment of penetrating wounds of the abdomen laparotomy is resorted to either for the purpose of (1) arresting dangerous hæmorrhage, or (2) the detection and treatment of a wound or wounds of its hollow viscera. The first indication is readily recognized, and the diagnosis not only justifies the operation, but imposes it as a stern duty upon the surgeon from which he should never shrink. The recognition of the second indication offers greater difficulties, and the uncertainty of diagnosis which surrounds such cases is used as a sufficient argument by many in opposing the adoption of timely and efficient surgical treatment, and is responsible for the loss of many lives which otherwise might have been saved. The uncertainty of diagnosis must remain in the way of a more general adoption of laparotomy in the treatment of penetrating wounds of the abdomen in the case of timid surgeons, and the same cause may lead to most unpleasant medico-legal complications in the practice of bolder and more aggressive operators. Clinical experience and statistics have demonstrated the importance of making a distinction between punctured and gunshot wounds in the abdomen, both in reference to diagnosis and treatment. It is well known that penetrating stab wounds are less likely to be complicated by visceral injury than bullet wounds, consequently this class of injuries offers a more favorable prognosis and does not call so uniformly for treatment by abdominal section. That penetrating gunshot wounds of the abdomen do not always implicate the gastro-intestinal canal has been well demonstrated by experiment and clinical observation. During the last two years three cases of bullet wounds of the abdomen came under my observation where no doubt could be entertained that penetration had taken place, and yet all the patients recovered without operation. In all three cases the bullet had taken an antero-posterior direction. As in private practice the treatment of penetrating wounds of the abdomen usually involves great medico-legal responsibilities, it becomes of the greatest importance to arrive at positive conclusions in reference to the character of the injury before the patient is subjected to the additional risks to life incident to an abdominal section.

We will suppose a case. In a quarrel a man is shot in the abdomen. The assailant is placed under arrest. The surgeon who is called establishes the fact that the bullet has entered the abdominal cavity, and from the point of entrance and its probable direction he has reason to believe that it has wounded some part of the gastro-intestinal canal, and he concludes to verify his diagnosis by an exploratory lapar-

otomy; the operation is performed, and the most careful examination made, but no visceral wound is found. The wound is closed and the patient dies on the third or fourth day of septic peritonitis. The attorney for the State charges defendant with murder.

The defense will very naturally raise the questions: "Did the man die of the injury or the operation?" "Shall the defendant be tried for assault and battery or for murder?" During the trial the attending surgeon is made a target for a volley of a medley of scientific and unscientific questions by the cunning attorney for the defense in his attempt to save his client from the gallows or State prison for life, at the expense of the reputation of the surgeon and the respect and good name of the art and science of surgery. This picture is not overdrawn. Such cases have happened and will happen again. It is apparent that if some infallible diagnostic test could be applied in cases of penetrating wounds of the abdomen which would indicate to the surgeon the presence or absence of visceral lesions of the gastro-intestinal canal the indication for aggressive treatment would become clear and the medico-legal responsibility of the operator would be reduced to a minimum. As we can never expect by a study of symptoms or by the ordinary physical examination to fill this gap, I was induced to search for some reliable test which in such cases should prove that the penetrating bullet or instrument had injured the gastro-intestinal canal. It occurred to me that a wound in the stomach or intestine should be sought for in some such way as the plumber locates a leak in a gas-pipe. The first object to be accomplished was to prove the permeability of the entire gastro-intestinal canal to inflation of air, and the next step was to find some innocuous gas which when inflated would escape from the intestinal wound into the peritoneal cavity, and from there through the external wound, where its presence could be proved by some infallible test.

I. PERMEABILITY OF THE ILEO-CÆCAL VALVE TO RECTAL INSUFFLATION OF AIR OR GAS.

A great deal has been said and written in reference to the permeability of the ileo-cæcal valve to injections of fluids into the rectum or to the insufflation of air or gases. The majority of those who have studied this subject clinically or by experiment make the positive assertion that the ileo-cæcal valve is perfectly competent and effectually guards the ileum against the entrance of both fluids and gases forced into the rectum, while others insist that it is permeable only in exceptional cases, and only a few claim that its resistance can be overcome by a moderate degree of pressure. Heschl (*Zur Mechanik der diastaltischen Dampferforationen Wiener Med. Wochenschrift*, No. 1, 1881) made a number of experiments and satisfied himself that the ileo-cæcal valve serves as a safe and perfect barrier against the entrance of fluids from below. In testing the resisting power of the coats of the intestine he found that the serous coat of the colon gave way first to overdistension, while the remaining tunics yielded subsequently to a somewhat slighter pressure. The

small intestine of a child on being subjected to overdistension ruptured first on the mesenteric side, the place where acquired diverticular are found. Bull (*Virchow's Jahresbericht*, 1878, B. 11. S. 205) has found that in the adult one litre of water injected by the rectum will reach the cæcum, but that the entire capacity of the large intestine is from 4 to 5 litres. He is of the opinion that in the living body fluid cannot be forced beyond the ileo-cæcal valve, although ancient and modern experimenters claim to have succeeded in the cadaver. He affirms that when the rectum is distended by air the ileo-cæcal valve is rendered incompetent and the air passes into the small intestines.

Cantani (*Virchow's Jahresbericht*, 1879, B 11 S, 180) is a firm believer in the permeability of the ileo-cæcal valve to fluid rectal injections. In one instance he treated a case of coprostasis by an injection of a litre and a half of oil per rectum, and an hour later a part of the oil was ejected by vomiting. He advises that the intestinal tract above the ileo-cæcal valve should be utilized as an absorbing surface in cases requiring rectal alimentation, and when in a diseased condition should be treated by topical applications.

Behrens (*Ueber den Werth der Künstlichen Aufreibung des Dickdarmes mit Gasen u. Flüssigkeiten. Göttingen. Dissertation. 1886*) concluded from his experiments that it required the insufflation per rectum of one and one-eighth litres of air to reach the ileum through the ileo-cæcal valve. In his experiments he had no difficulty in overcoming the competency of the ileo-cæcal valve by rectal insufflation of air.

Debierre (*La valvule de Bauhin considérée comme barrière des apothécaires. Lyon Médicale*, No. 45, 1885) made numerous experiments on the cadaver to test the permeability of the ileo-cæcal valve to rectal injections of fluids or inflation of air. The results which he obtained were not constant. In some subjects the valve proved only permeable to air; in others, to both air and water, while in some no air or fluids could be forced into the ileum by any degree of force. When the intestine was left *in situ* the valve was found less permeable than when the intestine had been removed from the body. He attributes the different degrees of competency of the valve to variations in the anatomical construction of the valve. If both lips of the valve are equal in length, or if the lower lip is longer the valve was found impermeable. It proved permeable in cases where the lower lip was shorter, contracted and smaller than the upper. In the last instance the advancing volume of fluid or air lifted the upper valve, while in the former structure of the valve the margins of the lips of valve were pressed against each other, perfectly shutting off all communication between the colon and the ileum.

Mr. Lucas ("On Inversion with Inflation in the Cure of Intussusception." *The Lancet*, January 16, 1886) enumerates the following objections against forcible rectal injections of water as a means to reduce an invagination:

1. Owing to its weight it exerts much too strong lateral pressure for the intestine safely to bear, and

he has found it easy to rupture the bowel after death by forcing in water.

2. Should reduction have been accomplished the contact of a large quantity of water with the large bowel is apt to increase the tendency to diarrhoea. He claims, very properly, that air, on the other hand, is a natural occupant of the intestinal canal, and whilst its pressure is of the gentlest its presence excites no unnatural peristaltic action. He administers an anæsthetic to the point of relaxation before the inflation is attempted.

Dawson (*Lancet and Clinic*, Feb. 21, 1885) made a number of experiments on the cadaver and came to the conclusion that when the ileo-cæcal valve is in a normal condition it effectually guards the small intestine against the ingress of fluids from below.

Illoway (*American Journal Medical Sciences*, Vol. 41, p. 168) devised a force-pump which he strongly recommends for the purpose of forcing water beyond the ileo-cæcal valve in case the seat of an intestinal obstruction is located above that point. He reports four cases of intestinal obstruction treated by this method, three of which recovered.

Battery (*Transactions of the American Medical Association*, 1878) asserts the permeability of the entire alimentary canal by enema, and verifies his statement by the rectal of his own clinical experience and experiments upon the cadaver. Ziemssen recommends inflation of the rectum for diagnostic and therapeutic purposes and proceeds as follows: a rectal tube about 6 inches long is carried into the anus and fixed by pressing together the nates, the patient lying on the back. A funnel is then connected with the rectal tube by means of rubber tubing. For complete inflation of the large intestine 3 drams of bicarbonate of soda and $4\frac{1}{2}$ drams of tartaric acid are separately dissolved in water and portions of either solutions alternately added. To prevent sudden overdistension of the bowel it is advised to add the solutions at intervals of several minutes. A very important use of this method is to diagnosticate the position of contractions, strictures, or occlusion of the intestine in cases in which it is desirable to operate, and also as showing the position of peritoneal adhesions. The result of his observations has led him to believe that, as a rule, the small intestine is completely closed to the entrance of substances from the colon by the ileo-cæcal valve. Under the influence of deep chloroform narcosis, however, this resistance is lessened, and fluids can be thrown into the small intestine.

In my paper read at the last International Medical Congress ("An Experimental Contribution to Intestinal Surgery with Special Reference to the Treatment of Intestinal Obstruction") the following experiments appear which illustrate the difficulty in overcoming the resistance of the ileo-cæcal valve by rectal injections of water:

Experiment 23.—While completely under the influence of ether an incision was made through the linea alba of a cat, sufficiently long to render the ileo-cæcal region readily accessible to light. An incision was made into the ileum just above the valve and by gently retracting the margins of the wound the valve could be distinctly seen. Water was then

injected into the rectum and as the cæcum became well distended it could be readily seen that the valve became tense and appeared like a circular curtain preventing effectually the escape even of a drop of fluid into the ileum. The competency of the valve was only overcome by overdistension of the cæcum which mechanically separated its margins, which allowed a fine stream of water to escape into the ileum. The insufficiency of the valve was clearly caused by great distension of the cæcum. That such a degree of distension is attained by no inconsiderable danger was proved by this experiment, as the cat was immediately killed, and on examination of the colon and rectum a number of longitudinal rents of the peritoneal coat was found.

Experiment 24.—In this experiment, a cat was fully narcotised with ether, and while the body was inverted, water was injected per rectum in sufficient quantity, and adequate force by means of an elastic syringe to ascertain the force required to overcome the resistance offered by the ileo-cæcal valve. Great distension of the cæcum could be clearly mapped out by percussion and palpation before any fluid passed into the ileum. As soon as the obstruction at the valve was overcome, the water rushed through the small intestines, and having traversed the entire alimentary canal issued from the mouth. About a quart of water was forced through in this manner. The animal was killed and the gastro-intestinal canal carefully examined for injuries. Two longitudinal lacerations of the peritoneal surface of the rectum, over an inch in length, were found on opposite sides of the bowel.

Experiment 25.—This experiment was conducted in the same manner as the foregoing, only that the cat was not etherized. More than a quart of water was forced through the entire alimentary canal from anus to mouth. The animal was not killed, and lived for eight days, but suffered during the whole time with symptoms of ileo-colitis. A post-mortem examination was not made in this case, although the symptoms manifested during life leave no doubt that they resulted from injuries inflicted by the injection."

It will thus be seen that in the three cases where fluid was forced beyond the ileo-cæcal valve, in two of them the post mortem revealed multiple lacerations of the peritoneal coat of the large intestines, while the third animal sickened immediately after the experiment was made, and died, from the effects of the injuries inflicted, eight days later. These experiments combined with clinical experience leave no further doubt that, practically, the ileo-cæcal valve is not permeable to fluids from below, and that for diagnostic and therapeutic uses it is unsafe and unjustifiable to attempt to force fluids beyond the ileo-cæcal valve. We should *a priori* expect that air and gases on account of their less weight and greater elasticity than water, could be forced along the intestinal canal with less force, and for that reason alone, if for no other, should be preferred to water in cases where it appears desirable to distend the intestine above the ileo-cæcal valve. The results obtained by experimental research in the past speak in favor of rectal inflation by air or gas in all cases

where for diagnostic or therapeutic purposes it becomes necessary to dilate the entire or a portion of the gastro-intestinal canal.

1. Rectal Insufflation of Air.

*Experiment 1.*¹—Dog, weight 75 pounds. The animal was profoundly anesthetized, and by means of an ordinary elastic syringe air was forced through the rectum until the whole abdomen became distended and tympanitic. The abdominal cavity was opened in the median line, and the whole intestinal canal was found distended. An incision about an inch in length was made about the middle of the small intestines when air escaped, and about one foot of the intestine on either side of the wound collapsed. The remaining portion of the intestines remained unaffected by the incision. The animal was killed, and every part of the entire gastro-intestinal canal was carefully examined for injuries. The ileo-cæcal valve remained intact, and no evidences of rupture of any of the coats of the intestines could be detected.

Experiment 2.—Dog, weight 12 pounds. Under full anesthesia the gastro-intestinal canal was inflated in the same manner as in the preceding experiment, and the inflation was carried to the same extent. On opening the abdomen in the median line the distended loops of the intestines protruded from the wound and partial evisceration was allowed to take place for the purpose of examining the intestines for injuries. The closest inspection failed to detect evidences of partial or complete rupture of any of the tunics. One of the distended coils of the intestine was incised at opposite points on lateral aspect, the incisions being an inch in length. Only a limited segment of the bowel on each side of the wounds collapsed, and although the peristalsis was active more remote portions were emptied very slowly. The wounds were united transversely for the purpose of making an artificial diverticulum. The animal recovered without any untoward symptoms.

Experiment 3.—Dog, weight 13 pounds. Animal profoundly etherized, and air inflated as in former experiments. The distended colon could be clearly mapped out by percussion before a gurgling sound in the region of the ileo-cæcal valve indicated that the air had entered the ileum. After this had occurred the middle of the abdomen became prominent and tympanitic. As soon as the resistance offered by the ileo-cæcal valve had been overcome it required less force in distending the remaining portion of the gastro-intestinal canal. The inflation was carried to the extent of distending the stomach, an event which was easily recognized by a considerable prominence in the epigastric region which was tympanitic on percussion. At this time an elastic tube was inserted into the stomach, and its free end immersed under water. Bubbles of air escaped freely, and the abdominal distension was materially diminished. As the inflation was continued the air would escape

through the stomach-tube, showing that a moving current of air existed between the rectal tube and the stomach tube. The abdominal distension which remained after the experiment had completely disappeared after eighteen hours, and the animal never manifested pain or any other symptoms of disease.

Experiment 4.—Dog, weight 15 pounds. In this experiment inflation was practiced without anesthesia. The rigidity of the abdominal muscles greatly interfered with the distension of the colon to a requisite degree for overcoming the competency of the ileo-cæcal valve. The passage of air from the cæcum into the ileum through the ileo-cæcal valve was announced by an audible gurgling sound which was repeated at intervals, as the cæcum, after partial collapse, again was distended by renewing the inflation. The insufflation was continued until the stomach became distended by air, which caused vomiting and copious eructations of air. The dog remained in perfect health after the inflation.

These experiments prove the feasibility of forcing air through the entire alimentary canal from below upwards. In not a single experiment could any structural changes be found in the walls of the intestine, and all animals not killed immediately after the experiment recovered. The results of these experiments contrast strongly with those where the same objects were in view by rectal injections with water. In the latter experiments the force requisite to overcome the ileo-cæcal valve invariably produced lacerations of the peritoneal coat of the bowel, which in themselves would constitute a grave source of danger. It now became necessary for me to prove that the ileo-cæcal region in man in so far resembled that in the dog that the ileo-cæcal valve could be rendered more readily incompetent by inflation of air than by injections of fluids. The following two experiments were made for this purpose:

Experiment 5.—A young man, 25 years of age, a patient in the Milwaukee Hospital under treatment for a tumor in the epigastric region, was subjected to the experiment. He was placed flat on the back. On percussion the whole umbilical region was found flat and the abdominal wall retracted. No anesthesia. With an ordinary elastic syringe air was injected slowly into the rectum. As inflation progressed the outlines of the entire colon could be clearly seen and accurately mapped out by percussion. The cæcal region especially became very prominent. The inflation was continued very slowly, and as soon as the air passed through the ileo-cæcal valve the hypogastric and umbilical regions began to rise and resonance replaced the former dulness on percussion. The arrival of air in the stomach was indicated by distension of the epigastric region, disappearance of the contour of the tumor and resonance on percussion. During the whole process of inflation the patient only complained of a slight pain in the splenic flexure of the colon, and a sensation of fullness in the abdomen. As soon as it became apparent that the stomach was distended by air a stomach-tube was introduced and its free end was placed under water. As the inflation was continued bubbles of air continued to escape. On assuming the erect position

¹ These experiments were made at the County Hospital, and my thanks are due to Dr. M. E. Connel, Superintendent of the hospital and his assistants, and Dr. Wm. Mackie of Milwaukee, for valuable assistance.

the patient complained of colicky pains in the umbilical region which undoubtedly were caused by an exaggerated peristalsis. The pain, however, soon disappeared, and on the following day he was as well as usual.

Experiment 6.—Adult male, suffering from neurasthenia. Experiment and result the same as in No. 5, only that in this case the pain due to distension of the colon was referred to the ileo-caecal region, and the colicky pain in the umbilical region persisted for a longer time. The air was again forced from anus to mouth without causing any injury whatever and only moderate degree of pain for a short time.

The foregoing experiments demonstrate conclusively that in the human subject by a moderate degree of force, short of producing any injury of the tunics of the intestines, air can be forced along the entire alimentary tract, and that this procedure can be resorted to with perfect safety for diagnostic and therapeutic purposes in all cases where the tissues of the intestinal wall have not suffered too much loss of resistance from antecedent pathological changes.

2.—Inflation of Alimentary Canal through Stomach Tube.

We should naturally expect that the alimentary canal could be inflated with more ease and with a less degree of force by following the normal peristaltic wave. That this is not the case will be seen from the following experiment:

Experiment 7.—Dog, weight 40 lbs. (18 kilograms). After complete anaesthesia was effected a flexible rubber tube was introduced into the stomach and the free end of the tube connected with a four-gallon rubber balloon, containing hydrogen gas, by means of a rubber tube. Between the gas reservoir and the stomach-tube a manometer was interposed, registering accurately the force used in making the inflation. The inflation was made by compressing the rubber bag. A tube was introduced into the rectum to facilitate the escape of gas that might reach this portion of the intestinal tract. Under a pressure of one pound and a half the stomach dilated rapidly, and later the entire abdomen became distended and resonant on percussion, but no gas escaped per rectum. When the pressure was increased to two pounds (1 kilogram) no further distension of the abdomen took place, as the gas escaped along the side of the stomach tube. At this time respiration became greatly embarrassed, but was relieved on allowing gas to escape through the stomach-tube. On compressing the abdomen firmly the distension disappeared almost completely, at the same time a large quantity of gas continued to escape through the stomach tube. Inflation was renewed, and under a pressure of one pound and a half, the abdomen again became uniformly distended. When the pressure was increased to two pounds (1 kilogram) the dog suddenly died, and all efforts at resuscitation failed. On opening the abdomen the stomach was found enormously distended, reaching three inches below the umbilicus, occupying almost the entire abdominal cavity. The upper half of the small in-

testines was distended; numerous points of sharp flexions were found among the different distended coils. The distended stomach had evidently encroached so much upon the abdominal space as to render the greater part of the intestinal canal impermeable by pressure.

Experiment 8.—Dog, weight 15 lbs. After the animal was placed fully under the influence of ether the abdomen was opened and the caecum and lower portion of ileum drawn forward into the wound, and a large needle of an aspirator inserted into the ileum just above the ileo-caecal valve. Through a rubber tube hydrogen gas was forced into the stomach. Under one pound (5 hectograms) of pressure the stomach and upper portion of the intestines dilated readily. When the force was increased the gas returned through the oesophagus along the sides of the stomach tube.

Experiment 9.—Dog, medium size. This animal was killed to ascertain the results of an experiment made for another purpose. Rubber balloon containing hydrogen gas and manometer were used for making the inflation. The tube through which the inflation was made was tied in the oesophagus. The abdomen was distended enormously, and on increasing the pressure to three and three-fourths pounds (1.5 kilograms), still no gas escaped through the rectal tube. The abdomen was then opened, when the stomach was found so enormously distended that it filled almost the entire abdominal cavity. About one-fourth of the length of the small intestines was found distended, and among the distended loops numerous acute flexions could be seen. After the abdomen was opened, under long and continuous distension, the peritoneal covering of the stomach gave way, when the manometer registered only one pound and a half of pressure.

Experiment 10.—Dog, weight 18 lbs. (8 kilograms). Immediately after death the oesophagus was isolated and the tube of the hydrogen gas inflator securely tied in, and a glass tube was inserted into the rectum. Under a pressure of two and three-fourths pounds (1.2 kilograms) registered by the manometer the gas first dilated the stomach and then passed along the intestines until it escaped in a steady stream through the rectal tube, where it was ignited. On opening the abdomen the stomach was found greatly distended, while the distension of the intestines was a great deal less marked. None of the tunics of the stomach or intestines were injured.

Experiment 11.—Dog, weight 20 lbs. (9 kilograms). Animal etherized and a flexible tube connected with the gas inflator introduced into the stomach and a glass tube into the rectum. On inflation the stomach became gradually distended, and when the pressure had reached one pound and a half (.6 kilogram) the dog vomited and a good deal of gas escaped at the same time. Inflation was again commenced and was followed by uniform distension and tympanitis over the entire abdomen, when the pressure reached two pounds and a half (1 kilogram) the gas escaped from the rectum, and when ignited burned with a steady blue flame. The experiment was followed by no unfavorable symptoms.

Experiment 12.—Dog, weight 12 lbs. (5½ kilograms). Under the influence of ether inflation with hydrogen gas in the same manner as in last experiment. As soon as the stomach became well distended, and the manometer registered one pound and a half of pressure, vomiting occurred, attended by a free escape of gas, which was followed by collapse of the distended epigastric region. When inflation was again resumed, it was noted that any increase of pressure over one pound (.45 kilogram) was followed by regurgitation of gas, and on this account it was found impossible to inflate the lower portion of the intestinal tract. No unfavorable symptoms followed the experiment.

Experiment 13.—Dog, weight 28 lbs. (12½ kilograms). Under the influence of ether inflation of hydrogen gas through stomach tube. As soon as the pressure was increased to more than 1 lb. (.45 kilogram) the gas escaped along the sides of the tube through the œsophagus, consequently only the upper portion of the abdomen could be distended, and the inflation evidently did not extend much beyond the stomach. The experiment was repeated several times with the same result. The animal remained perfectly well after the experiment.

Experiment 14.—Dog, weight 12 lbs. (5 kilograms). Inflation of stomach by hydrogen gas under full anesthesia. The effect of the inflation was the same as in the last experiment, only the stomach and upper portion of the small intestines could be distended and further inflation was impossible, as the gas escaped from the stomach as soon as the pressure exceeded 1 lb. (.45 kilogram). A large needle of an aspirator was pushed through the linea alba into the stomach, and the gas which escaped through it on being lighted burned with the characteristic blue flame. After the needle was withdrawn the inflation was continued to ascertain if the puncture in the stomach would allow the escape of gas into the peritoneal cavity. The inflation was continued until the entire abdomen was distended by the gas. That the distension and tympanites was due to the presence of gas in the peritoneal cavity became evident, as it remained after the stomach had been emptied of its gas, and on percussion it was ascertained that the entire liver dulness had disappeared. The dog recovered without symptoms of peritonitis or any other ill-effects from the experiment.

These experiments demonstrate conclusively that it is more difficult to inflate the alimentary canal from above downwards than from below upwards, as in the living animal I succeeded only in one instance in forcing hydrogen gas from mouth to anus, while in others a degree of force sufficient to rupture the peritoneal coat of the stomach only effected distension of the stomach and upper portion of intestinal canal. It is evident that great distension of the stomach constitutes an important factor in causing or aggravating intestinal obstruction, as it effects compression which causes impermeability of the intestines, or aggravates conditions arising from an antecedent partial permeability by producing sharp flexions among the distended coils of the intestines. For diagnostic and surgical purposes the stomach can be readily inflated

almost to any extent through a stomach tube, and when it becomes necessary to ascertain the presence of a visceral wound or perforation of this organ, this method of inflation may be resorted to with advantage.

3. *Experiments to Determine the Degree of Force which is Necessary to Overcome the Resistance offered by the Ileo-cæcal Valve.*

Accurate experiments to determine the force required to render the ileo-cæcal valve incompetent by insufflation of air or gas have so far not been made, and as it is exceedingly important to obtain some accurate information on this subject, the following experiments were made. In all experiments air or hydrogen gas was used. The inflation was made with a rubber balloon. The pressure was estimated either with a mercury gauge, or with a manometer used by gas fitters and plumbers. The manometer or mercury gauge was connected by means of rubber tubing with the rectal tube on one side and the rubber balloon on the other. The rubber balloon in which the hydrogen gas was collected held 4 gallons, and numerous experiments showed that when the gas was forced through the opening of a stopcock, the lumen of which was about the size of a knitting needle, a compression equal to 200 lbs. (90 kilograms) would never register more than 3 lbs. (1.3 kilograms) of pressure.

In the living subject the escape of air or gas from the rectum was prevented by an assistant pressing the margins of the anus firmly against the rectal tube.

Experiment 15.—Dog, weight 35 lbs. (16 kilograms). Immediately after death the lower portion of the rectum was isolated and the rectal tube inserted and fixed in its place by tying a string firmly around the rectum. The abdomen was opened and the intestines left *in situ*. The ileum was cut transversely 6 inches above the ileo-cæcal valve and a glass tube inserted into the distal end, which was also tied in. Hydrogen gas was inflated from a rubber balloon. Under a pressure of ¾ lb. (.3 kilogram) the cæcum was dilated, and a moment later the gas escaped from the glass tube and was ignited; the flame remained steady under a pressure of from ½ to ¾ lb. (.2 to .3 kilogram).

Experiment 16.—Dog, weight 20 lbs. (9 kilograms). Same as in the preceding experiment, only that the resistance of the ileo-cæcal valve was overcome under a pressure of ½ lb. (.2 kilogram). The distension of colon and cæcum was moderate, and signs of injury to its tunics could not be found in either experiment.

Experiment 17.—Dog, weight 23 lbs. (10 kilograms). In this experiment the abdomen was opened immediately after death, and a large hypodermic needle inserted into the ileum a short distance above the ileo-cæcal valve before the inflation of hydrogen gas was made. A pressure of ¾ lb. (.3 kilogram) was sufficient to force the gas through the ileo cæcal valve and through the needle; the valve remained open under a steady pressure of ½ lb. (.2 kilogram). Having determined that air and gas can be forced beyond the ileo-cæcal valve in dogs under very low

pressure, varying from $1\frac{1}{2}$ - to $2\frac{1}{2}$ -lb., I proceeded to test the degree of resistance of the ileo-cæcal valve in the human subject.

Experiment 18.—Strong, healthy young man. The subject was placed flat upon his back and hydrogen gas was inflated from a rubber balloon. At first the gas was forced in very slowly under a pressure of $1\frac{1}{2}$ lb. (.6 kilogram), which distended the colon visibly as far as the cæcum. As the distension appeared to remain the same the pressure was increased to 2 lbs. (.9 kilogram), when suddenly the indicator of the manometer receded to 1 lb. (.4 kilogram), and the umbilical region became prominent and resonant, showing conclusively that the ileo-cæcal valve had been passed and the small intestines were filling rapidly with gas. As soon as the whole abdomen had become distended and tympanitic the manometer again registered $1\frac{1}{2}$ lb. (.6 kilogram) of pressure, and remained at this figure for some time after further inflation was discontinued by turning the stopcock.

Experiment 19.—Young man, in good health. Experiment conducted in the same manner as in the foregoing. After the colon and cæcum had been well dilated the manometer registered $2\frac{1}{4}$ lbs. (.4 kilogram), and the umbilical region became prominent and resonant. As the inflation advanced the average pressure was $1\frac{3}{4}$ lb. (.8 kilogram), and twice it was increased to $2\frac{1}{2}$ lbs. (1.4 kilogram), when the patient complained of pain in the umbilical region. As soon as the stopcock was turned the pressure sank to $\frac{3}{4}$ -lb. (.3 kilogram). These two experiments prove that in a normal condition the ileo-cæcal valve in a healthy adult person is overcome by rectal inflation under a pressure of $1\frac{1}{2}$ to $2\frac{1}{4}$ lbs. (.6 to 1.2 kilogram). This amount of pressure is not sufficient to injure the tunics of a healthy intestine, and in both instances the subjects of the experiments complained but little of the immediate or remote effects of the experiment. As the result of numerous observations, I can state that when the inflation is made slowly and continuously there is less danger of injuring the intestines than when the inflation is made rapidly, or with interruptions. Slow and gradual distension of the cæcum is best adapted to overcome the competency of the ileo cæcal valve, by effecting distasis of the margins of the valve. A rubber balloon holding from 2 to 4 gallons (10 to 20 litres) recommends itself as the most efficient and safest instrument for making rectal insufflation for therapeutic or diagnostic purposes.

The following experiments were made to determine:

4. *The Amount of Pressure Necessary to Force Hydrogen Gas through the Entire Alimentary Canal by Rectal Inflation.*

Experiment 20.—Dog, weight 35 pounds (16 kilograms). Immediately after death rectal inflation of hydrogen gas was made, and a pressure of one pound (.4 kilograms) sufficed to distend the entire abdominal cavity, and when a tube was introduced into the stomach and a burning taper applied to its end a blue flame at once appeared and continued as long as the inflation was kept up under the same pressure.

Experiment 21.—Dog, weight 12 pounds (.5 kilograms). Under ether narcosis rectal inflation of hydrogen gas from rubber balloon. The ileo-cæcal valve offered very little resistance, and as soon as the manometer registered one pound and a half (.6 kilogram) of pressure the gas escaped through the stomach tube which had been introduced previously, and on applying a lighted taper it burned with a continuous flame as long as the inflation was continued.

Experiment 22.—Dog, weight 20 pounds (.9 kilograms). Experiment and result same as in last; the pressure never exceeded one pound and a half (.6 kilogram).

Experiment 23.—Dog, weight 19 pounds (.9 kilograms). In this experiment no anæsthetic was used, and in consequence the pressure had to be increased to three pounds (1.3 kilograms) before the gas escaped through the stomach tube. On account of the violent contractions of the abdominal muscles the escape of gas was intermittent, the flame being frequently extinguished by an absence of the gas.

Experiment 24.—Dog, weight 21 pounds (10 kilograms). The animal being completely under the influence of ether the abdomen was opened in the median line, and the ileo-cæcal region made accessible to sight. Hydrogen gas was inflated per rectum, and under a pressure of three-quarters of a pound (.3 kilogram) readily passed the ileo-cæcal valve, and under one pound of pressure it ascended the intestinal canal, and in a few seconds reached the stomach. A tube was introduced into the stomach, and as the gas escaped it was ignited and burned with a steady flame.

Experiment 25.—Dog, weight 18 pounds (.8 kilograms). Rectal insufflation of hydrogen gas, the dog being fully under the influence of an anæsthetic. The colon and cæcum were only slightly distended when the gas under one-quarter of a pound (.1 kilogram) of pressure passed the ileo-cæcal valve. Under one pound (.4 kilogram) of pressure the abdomen became uniformly distended and tympanitic, and when a tube was introduced into the stomach the escaping gas was ignited and burned with a steady flame as long as the pressure was continued.

Experiment 26.—Dog, weight 20 pounds (.9 kilograms). Animal etherized, and when completely relaxed hydrogen gas was inflated per rectum, and passed the ileo-cæcal valve under a pressure of half a pound (.2 kilograms). The stomach became distended under a pressure of one pound and a half (.6 kilogram), and on the introduction of a tube the escaping gas was ignited and burned with a continuous flame as long as the manometer registered half a pound (.4 kilogram) of pressure. In all animals where the insufflation was not complicated by abdominal section no unpleasant symptoms followed the experiments. All of the animals recovered as rapidly as after an ordinary ether narcosis. In all of the experiments the pressure fell rapidly after the ileo-cæcal valve had been opened, but the pressure had again to be increased before the gas reached the stomach. It usually required one-half to one pound more pressure to force gas through the entire alimentary canal than when it was forced only through

the ileo-cæcal valve. Whenever it becomes desirable to conduct the hydrogen gas a considerable distance along the intestines, or through the entire alimentary canal, it is exceedingly important to proceed slowly with the inflation, as under slow distension on half a pound (.2 kilogram) of pressure will accomplish in time a greater degree of distension than four times this amount of pressure if the force is applied quickly, and only for a short time, and is attended by much less risk of injury to the coats of the intestines. I am quite convinced that in the dog rectal insufflation of hydrogen gas made under a pressure of one-quarter of a pound, if made very slowly, the abdominal walls being completely relaxed by an anæsthetic, will not only overcome the resistance offered by the ileo cæcal valve, but will prove sufficient to force the gas through the whole length of the alimentary canal. I have now sufficiently demonstrated the permeability of the ileo-cæcal valve and the entire alimentary canal in animals and man to rectal insufflation of air and gas, and I shall now endeavor to establish the safety of this procedure as a diagnostic and therapeutic measure by showing:

II. THE RESISTANCE OF DIFFERENT PORTIONS OF THE GASTRO-INTESTINAL CANAL TO DIASTALTIC FORCE.

a. Stomach.

Experiment 27.—Large, healthy, adult dog. Experiment made immediately after death. Stomach *in situ*. (Esophagus tied and distension made with a force pump from pyloric orifice, the organ being rapidly dilated with air. When the manometer registered eight and one-half pounds (3.8 kilograms) of pressure the stomach was distended at least eight times its normal size, when a rent in the peritoneal covering an inch and a half in length parallel to, and near the omental attachment occurred.

Experiment 28.—Middle aged man, died of sepsis. The whole gastro-intestinal canal showed marked evidences of septic gastro-entero-colitis, the mucous membrane being softened, very vascular, and dotted with numerous hemorrhagic infarcts. Organ *in situ* inflated with air in the same manner as in last experiment. Longitudinal rupture of peritoneal coat along anterior surface under two and one-half pounds of pressure (1.1 kilogram), and when it was increased to three pounds (1.3 kilograms) the whole thickness of the wall at the lesser curvature ruptured.

b. Small Intestines.

Experiment 29.—Subject same as in experiment 28. Lower portion of ileum under five pounds (2.2 kilograms) of pressure became emphysematous along mesenteric attachment, and ruptured completely as soon as the manometer registered five and three-fourths (2.3 kilograms) pounds of pressure.

Experiment 30.—Dog, weight 20 lbs. (9 kilograms). Immediately after death the lower part of the ileum, with mesenteric attachment intact, was gradually distended and remained intact until a pressure of ten pounds (2.5 kilograms) was reached, when air escaped between the two serous layers of the mesen-

tery, showing that minute ruptures at numerous points had taken place. When the distension had reached its maximum the segment of bowel inflated was elongated twice its normal length.

Experiment 31.—Upper portion of ileum of same animal when distended to its utmost gave way under a pressure of eight pounds (3.6 kilograms), the peritoneal coat on convex side rupturing to the extent of 2 inches (51 mm.) parallel to the axis of the bowel.

Experiment 32.—The middle portion of the small intestines, when subject to a pressure of eight pounds (3.6 kilograms), sustained a longitudinal rupture of the peritoneum on convex surface, and remaining tunics gave way when the pressure was increased to nine pounds (4 kilograms).

c. Colon.

Experiment 33.—Subject same as experiments 28 and 29. Experiment was made twenty-four hours after death. Colon and cæcum apparently very much softened and mucous membrane in a state of inflammation. One foot (3 d. m.) of the transverse colon isolated and gradually distended when the peritoneal coat along the border of one of the longitudinal bands ruptured under a pressure of two pounds and a half (1 kilogram). The peritoneal laceration became very extensive before the remaining tunics ruptured under a pressure of four pounds (1.8 kilograms).

Experiment 34.—Dog, weight 18 lbs. (8 kilograms). Immediately after death the ileum was tied just above the cæcum and the inflation made per rectum. Air was pumped in gradually with a force-pump and when the pressure reached ten pounds and a half (4.7 kilograms) air escaped between the peritoneal layers of the meso-colon; at this stage the longitudinal distension of the bowel exceeded twice its normal length.

Experiment 35.—Dog, weight 23 lbs. (10 kilograms). Experiment the same as the preceding. Air was pumped in rapidly until the mercury gauge registered ten and a half pounds (4.7 kilograms) of pressure, when the sigmoid flexure on its free surface gave way with a loud report, the rent being about one inch and a half (38 mm.) in length.

Experiment 36.—Dog, weight 18 lbs. (7 kilograms). Entire colon distended by rectal inflation of air, the ileum being tied just above the ileo-cæcal valve. Under a pressure of six pounds (2.7 kilograms) the peritoneum ruptured in a longitudinal direction, opposite the meso-colon, and the remaining tunics gave way a little later under the same pressure.

These experiments are of the greatest importance in showing that the pressure which was found necessary to apply in rupturing a healthy intestine was greatly in excess of that which is required to force air through the ileo-cæcal valve, or even the whole length of the alimentary canal. It only requires from one-quarter of a pound to a pound and a half (.1 to .7 kilograms) of pressure to force air through the ileo-cæcal valve, and from half a pound to two pounds and a half (.2 to .7 kilograms) to force it from anus to mouth, while even the weakest portion of the gastro-intestinal canal effectually resisted a distending force of from eight to ten pounds (3.6 to 4.5 kilo-

grams). The experiments on the human cadaver, where the resisting power of the gastro-intestinal canal to diastolic force was greatly reduced by ante-mortem pathological changes, show that under such circumstances it would have been safe to resort to inflation, as the pressure required to rupture the colon or small intestines exceeded that which has been found adequate to force air or gas beyond the ileo-cæcal valve, or even the entire length of the alimentary canal. When an intestine is distended to its utmost capacity slowly by inflation of air or gas, and the pressure is maintained uninterruptedly, rupture occurs at one of two points, either a longitudinal laceration of the peritoneal coat takes place on the convex surface of the bowel opposite the mesenteric attachment, or minute ruptures on the mesenteric side give rise to extravasation of air or gas between the two serous layers of the mesentery, in either case, if the pressure is increased, complete rupture takes place at the point where the laceration first commenced.

III. DISTENSION OF GASTRO-INTESTINAL CANAL BY RECTAL INSUFFLATION OF HYDROGEN GAS.

This part of the paper contains an account of the experiments which were made preliminary to the practical application of the hydrogen gas test as a diagnostic measure in penetrating wounds of the abdomen, and furnish only so many more demonstrations of the permeability of the ileo-cæcal valve and the entire alimentary canal to rectal inflation of hydrogen gas.

Experiment 37.—Dog, weight 15 lbs. (6 kilograms). Under ether anaesthesia hydrogen gas from rubber balloon was slowly forced into the rectum until the entire anterior abdominal wall had become uniformly distended and tympanitic, when the distended stomach was punctured with a large needle of an aspirator and gas escaped in a steady stream, and when ignited burned with a continuous flame. After a considerable portion of gas had been evacuated in this manner the upper abdominal region receded and the flame was extinguished. The animal recovered without any untoward symptoms.

Experiment 38.—Dog, weight 17 lbs. (7 kilograms). Without anaesthesia hydrogen gas was inflated per rectum until it escaped through a tube which had been introduced into the stomach. As it escaped from the stomach tube it was ignited and burned with a large blue flame. The abdominal muscles were so rigid that distension was never well marked, and the inflation required a good deal more force than in animals where muscular rigidity has been overcome by an anaesthetic. The dog remained perfectly well after the experiment and in a few hours the remaining tympanites had disappeared.

Experiment 39.—Dog, (weight 35 lbs. (15 kilograms)). No anaesthetics used. On account of rigidity of abdominal muscles it required persistent efforts to force hydrogen gas from rubber balloon per rectum through the whole alimentary canal. As soon as the stomach had become distended by the gas the animal vomited, at the same time gas escaped by repeated eructations. The animal manifested no signs of suffering after the experiment.

Experiment 40.—Dog, weight 27 lbs. (12 kilograms). Under anaesthesia hydrogen gas was inflated per rectum until it escaped through tube which had been introduced into the stomach; a lighted taper was applied to the free end of the tube and the gas ignited and burned with the characteristic blue flame.

Experiment 41.—Large Newfoundland dog. Under anaesthesia a duodenostomy was made, and hydrogen gas injected per rectum and ignited as it escaped from a rubber tube which had been inserted into the distal portion of the bowel through the fistula.

Experiment 42.—Adult male; abdominal organs healthy; no anaesthesia. Inflation of hydrogen gas per rectum. The gas was stored in a four-gallon (9 litres) rubber balloon and was forced into the rectum by compression. As the distension progressed the colon could be distinctly mapped out from sigmoid flexure to caecum by inspection and percussion. As soon as the caecum had become visibly prominent a stethoscope was applied over the ileo-cæcal region, and as the valve became incompetent by overdistension of caecum a distinct gurgling sound could be heard as the gas entered the ileum. Whenever inflation was arrested the gurgling sound disappeared and was heard again whenever the ileo-cæcal valve was opened by renewed inflation.

Distension of the small intestines was attended by resonance and prominence of umbilical and hypogastric regions. The incompetency of the ileo-cæcal valve was invariably announced by a reduction in the pressure. The patient complained of a sensation of distension in the umbilical region and intermittent colicky pains which, however, disappeared completely after a few hours. The pain appeared to be less severe than after similar experiments with inflation of air.

Experiment 43.—Young man in comparatively good health. Inflation same as in preceding experiment. Auscultation over ileo-cæcal valve revealed the same sounds as the gas escaped from the colon into the ileum. The sound seemed to vary somewhat according to the size of the opening in the valve and the force used in making the inflation, and always disappeared as the valve closed after suspension of inflation. The colicky pains subsided as the small intestines emptied themselves of their new contents. The assistant who compressed the rubber balloon was always able to announce the beginning of the incompetency of the ileo-cæcal valve by experiencing a sudden diminution in the pressure.

Experiment 44.—Adult male, suffering from gastric catarrh. Hydrogen gas inflation per rectum to extent of causing great distension of abdomen which caused the hepatic dulness to ascend at least two inches. Auscultatory signs the same. Sharp colicky pains in the umbilical region were relieved by a free escape of gas through rectum.

Experiment 45.—Hysterical female. Abdomen flat and dull on percussion from umbilicus to pubis; no resonance over sigmoid flexure. Rectal inflation with hydrogen gas. Compression of rubber balloon corresponding to only one-fourth pound (.1 kilogram) of pressure readily dilated the whole colon, its course

being indicated by a distinct prominence and tympanic resonance from sigmoid flexure to caecum. Under the same pressure the gas escaped with little or no resistance through the ileo-caecal valve from the colon into the ileum, the occurrence being attended by the characteristic auscultatory sounds and followed by distension and resonance of space from umbilicus to pubis. Amount of gas inflated about four litres. The patient complained of some pain in the region of the splenic flexure of the colon during the distension of the colon, and later of slight intermittent pain in the region of the umbilicus.

Experiment 46.—Middle-aged woman, suffering from retroversion of the uterus. Abdomen flaccid and dull on percussion in the median line from umbilicus to pubis. Rectum distended with hardened faeces. Hydrogen gas inflated in the usual manner. The mercury gauge registered two and a half pounds (1 kilogram) of pressure before the gas reached the sigmoid flexure, after this it fell to one pound (.4 kilogram) and the inflation progressed without any further resistance. As soon as the gas passed through the ileo-caecal valve the pressure fell to three-quarters of a pound (.3 kilogram) and remained so during the inflation of the small intestines, slight variations marking the opening and closing of the ileo-caecal valve. As the umbilical and hypogastric regions became prominent and tympanic the patient complained of a gripping pain. About eight litres of gas were injected. A few hours after the experiment all symptoms had disappeared.

Experiment 47.—Female recently operated on for laceration of perineum. Rectum empty. Abdomen flaccid; umbilical, hypogastric, and right iliac regions dull on percussion. The inflation was made very slowly and the pressure never exceeded 1 lb. (.4 kilogram). As the large intestine became distended the transverse colon came plainly into view. On auscultation over the ileo-caecal valve the escape of gas into the ileum was marked by a blowing sound, which in pitch was increased or diminished by the degree of pressure. As the lower portion of the small intestines became distended the lower part of the abdomen became prominent and tympanic, and the patient complained of colicky pains. About 3 litres of gas were inflated. In half an hour the patient appeared as well as before inflation.

Experiment 48.—Middle-aged physician suffering from typhlitis. This was the second attack, and the acute symptoms had subsided. Over the caecum a circumscribed area of dullness and tenderness. On palpation it appeared as though the swelling were adherent to the anterior abdominal wall. The area of dullness was outlined externally by pencil marks before inflation was commenced. As the colon became distended under a pressure of $\frac{1}{2}$ lb. (.1 kilogram), the circumscribed, indurated region became more prominent, imparting to the palpating fingers the feeling of hardness, but on percussion it was resonant, showing conclusively that the inflamed and indurated wall of the caecum had been lifted forwards by the pressure of the gas. Under the same pressure the gas escaped in a continuous stream into the ileum, its passage through the ileo-caecal valve being at-

tended by a well-marked blowing, gurgling sound. The patient felt the entrance of gas into the ileum distinctly and complained soon after of a slight colicky pain in the umbilical region. The space between umbilicus and pubis, which before inflation was completely dull on percussion, now became more prominent and tympanic. Only 2 litres of gas were used in this experiment.

Experiment 49.—Young physician in perfect health. Region between umbilicus and pubis perfectly dull on percussion, also left iliac fossa. Inflation of 4 litres of hydrogen gas under $\frac{1}{2}$ lb. (.15 kilogram) pressure. The outlines of the distended colon could be clearly seen and marked out by percussion before the gas escaped into the small intestines. The passage of gas through the ileo-caecal valve was again attended by a well-marked gurgling sound, after which the entire abdomen became prominent and tympanic. The patient felt a sensation of distension during the inflation of the colon, and as the small intestines became distended complained of gripping pains, gas escaped freely by eructations and per rectum, which soon relieved the colicky pains in the umbilical region.

Experiment 50.—Medical student in robust health. Region from umbilicus to pubis flat on percussion, while the course of the entire colon was tympanic. Rectal inflation with hydrogen gas. As the resistance of the ileo-caecal valve was overcome the mercury gauge registered $\frac{1}{2}$ lb. (.4 kilogram) of pressure. The passage of gas through the ileo-caecal valve was attended by a gurgling sound which was heard at some distance by a number of persons present in the room. Later a continuous blowing (almost amphoric) sound could be heard over the ileo-caecal valve. The subject of the experiment was conscious of the passage of gas from colon into ileum, and soon after complained of a colicky pain which he referred to the umbilical region. The whole abdomen became uniformly distended and tympanic on percussion, and the distress caused by the great distension was only relieved by a free escape of gas by eructations and through the rectum. Four litres of gas were used in this experiment.

Experiment 51.—Young physician in good health. Rectal inflation of 4 litres of hydrogen gas under a pressure of only $\frac{1}{2}$ lb. (.15 kilogram). Distension of colon well-marked previous to escape of gas through the ileo-caecal valve. As soon as the gas entered the ileum the middle and lower portion of the abdomen became distended and tympanic. The inflation was continued until the stomach became distended and gas escaped by eructation. The subject of the experiment complained of quite severe colicky pains as long as the small intestines remained distended by gas.

Experiment 52.—The writer of this paper, being desirous of experiencing himself the sensations which would be caused by inflation of hydrogen gas, submitted himself to experimentation under a pressure of $\frac{1}{2}$ lb. (.4 kilogram). Nearly 6 litres of gas were inflated *per rectum*. The distension of the colon caused simply a feeling of distension along its course, but as soon as the gas escaped into the ileum colicky

pains were experienced, which increased as insufflation advanced, and only ceased after all the gas had escaped, which was the case only after an hour and a half. When the intestines and the stomach had become fully distended the feeling of distension was distressing, and was attended by a sensation of faintness which caused a profuse clammy perspiration. A great deal of the gas escaped by eructation, which was followed by great relief. The colicky pains attending inflation of the small intestines by air or gas are evidently caused by increased peristaltic action of the bowels in their attempt to expel their contents, as it always assumed an intermittent type and subsided promptly after the escape of the gas.

In none of these experiments did the pressure exceed 1 lb. (.4 kilogram) in overcoming the resistance offered by the ileo-cæcal valve, and often a steady, long-continued pressure of $\frac{1}{4}$ - or $\frac{1}{3}$ lb. (.1 to .15 kilogram) sufficed. Every time the ileo-cæcal valve was rendered incompetent by distension of the cæcum the pressure was promptly diminished owing to the escape of gas from the colon into the ileum. In the experiment where the inflation was made in a case of typhlitis the ileo-cæcal valve offered no resistance, and the gas escaped freely into the ileum; the valve in all probability had been rendered partially or completely incompetent during the course of the local inflammation, or the indurated, thickened walls of the cæcum, when distended during the inflation, were better adapted in effecting incompetency of the valve. These experiments also furnish strong proof of the fact that inflation, to be safe and effective, should be done very slowly under a low, steady pressure, continued only for a short time, and is attended by no risks whatever of rupturing a healthy intestine and, when cautiously practiced, can be resorted to even in cases where the resisting power of the intestinal wall has been diminished by antecedent pathological processes.

As I was searching for an innocuous, non-irritating gas which, when inflated into the gastro-intestinal canal, would escape into the peritoneal cavity in case a wound or perforation existed, and had decided on trying hydrogen gas, it became necessary to study experimentally the effect of this gas on the different tissues of the living body. The numerous inflation experiments on man and dogs have demonstrated the safety of pure hydrogen gas when employed in this manner, as not in a single instance were any immediate or remote toxic symptoms observed which could be referred to absorption of the gas; hence we have the assurance that the inflation of a large quantity of hydrogen gas is unattended by any risk whatever as far as intoxication is concerned. The following experiments also show the innocuity and non-irritating qualities of hydrogen gas when brought in contact with the most susceptible tissues to inflammatory reaction in the living body; at the same time they also show that hydrogen gas is removed by absorption in a comparatively short time when injected into serous cavities or into the subcutaneous connective tissue.

(To be concluded.)

THE APPENDIX VERMIFORMIS; ITS FUNCTIONS, PATHOLOGICAL CHANGES AND TREATMENT.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

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Preliminary to a consideration of the function pertaining to any organism, it is requisite to understand its structure, or in other words, the physiology of a part depends upon its anatomy.

The presence of the appendix vermiformis in man and in some of the higher order of apes, while absent in most quadrupeds and other inferior animals, may perhaps lead the followers of Darwin to the conclusion that the missing link is to be sought in this development; but I have no inclination to enter into the abstruse question of evolution, and only regret that we are precluded from receiving any information by a study of comparative anatomy in respect to this unique appendage. If the dog and cat were supplied with this structure, the facility for making experiments upon them might enhance very much our knowledge of its normal and abnormal conditions, whether idiopathic or traumatic; but the door is shut to all such investigation, and a human subject does not fully avail for satisfactory data in regard to the structure of the appendix vermiformis and its office.

In its general outline it is subject to great variation of size and position, being found in different subjects from three to six inches in length, and lying diversely in its relations to the cæcum. Its diameter admits of considerable changes owing to the various contents of the canal, whether gaseous, mucus or serous. This tube is of the same size from its attachment to the lower walls of the cæcum to its termination in a blind pouch at its free extremity. When empty or only occupied with mucus, its diameter is ordinarily about one-fourth of an inch. There is usually a mesenteric attachment to the wall of the cæcum and this duplicature of the peritoneum invests its entire length, while a muscular layer is found between this and the mucous membrane which lines it. The opening into the cæcal cavity has a valvular arrangement of the mucous membrane which is capable of closing the orifice, and doubtless prevents the entrance of foreign bodies ordinarily into this blind pouch. It becomes, however, dilated under certain circumstances so as to admit of the passage of small solid masses through this orifice, and they became arrested in the tube proving a source of disturbance. In view of that fact, this structure has been regarded by some writers as a trap, which is very prone to cause the obstructions of its canal by foreign bodies, as when once introduced there is perhaps a kind of constriction of the orifice which interferes with their escape. That there exists in the middle coat of the appendix, longitudinal and circular, muscular fibres, which by their contraction and relaxation, alternately, provide for a serous or mucus exudation, and after certain modifications in it, promote its expulsion, is very

evident from observation of the histological elements of its organization. Whether any considerable proportion of the fecal matter enters the cavity of the appendix has not been determined, and it seems most probable that the quantity may be small in view of the relative size of this diminutive tubular sac and the capacious cæcal pouch which receives the contents of the ileum through the ileo-cæcal valve. The capacity for distension being limited in extent precludes the view, that the cavity of the appendix, may serve as a diverticulum in cases of undue accumulation of fecal matter in the colon.

An opportunity has been afforded to me recently of noting that obstruction of the descending colon from an organic stricture, inducing such distension of its walls by the retained contents as to result in perforation and death, did not materially affect the size of the appendix vermiformis. It cannot, therefore, be regarded as a safety valve for the cæcum, but rather as a loop-hole for the entrance of matters prejudicial to it, and the adjacent structure; and may be appropriately regarded as a danger signal to warn the organism of approaching trouble.

The location of the orifice of the vermiform appendix at the most dependent part of the caput coli while the entrance of the ileum through the ileo-cæcal valve is above and at the inner side, affording a direct passage to the contents of the alimentary canal into the cæcum as a receptacle, would seem to favor the conclusion that some change is there brought about by the contact of fecal matter with the emanations from the appendix.

Its mucous lining, according to Gray, is furnished with a large number of solitary glands, and Satterthwaite states in his "Manual of Histology" that "in the vermiform appendix we find the collection of solitary lymph-follicles so closely placed that the space left between adjoining glands does not equal in diameter that of these structures themselves."

On the other hand we learn from Quain, that, "in man the chief function of the cæcum is absorption, as is shown by the great number of lymphatics in its walls;" while Laudois tells us that, "the contents assume the character of feces and become formed in the lower part of the great intestine."

The high authority, Littré, warrants the assertion that, "it is in the cæcum, the residue of the alimentary substances assumes all the characteristics of fecal matter." In the absence of other explanation of the peculiar odor imparted to the contents of the colon from this point forward, it is fair to infer that this modification comes from the influence of the appendix vermiformis, either by some chemical or vital process.

I have not such data to record in support of this view as will stand the test of scientific criticism. Being without material for vivisections in the absence of wombats and apes, while the opportunities for elucidation from observations upon the human body are few, upon the principle of exclusion, it is expected that this theory of the function of the appendix may be entitled to consideration. As its province in the animal economy has not heretofore been pointed out by physiologists, I would appeal to them

to recognize this hypothesis on the same basis that the owner of a certain historic dog in the backwoods of North Carolina claimed that he was a good possum dog—that he had tried him thoroughly for every other species of game without discovering any hunting qualities, and hence he concluded that he ought to be good to catch the opossum. So of the appendix for getting up a stink.

Reasoning upon the general principle that all the organs of the human body are fitted for the discharge of useful purposes in the animal organism, we are not warranted in concluding that the appendix vermiformis is an exception to this rule of the fitness of things, and it behooves us to investigate seriously its function. We should satisfy ourselves as to its relations to the digestive and excrementitious processes, with its position as a sentinel at the gate-way, without participating, so far as known thus far, in the work of alimentation or defecation. The antiseptic property of sulphurous gases is well known, and the presence of sulphuretted hydrogen in the colon cannot be accounted for by any process of decomposition developed in its contents, as the cases of arrest of fecal matter with or without impaction, are not attended with such results as would ensue from such a process. We are therefore warranted in attributing the absence of any signs of degeneration to the presence of an antiseptic element, which is developed in the vermiform appendage and intermingled with the fecal mass in the cæcum which serves as a reservoir, where this process may be undergone as the residue of the alimentary substances is poured out of the small intestine. The effectual security against regurgitation by the structure of the ileo-cæcal valve and the barrier afforded by the valvular opening of the appendix to the entrance of fecal matter into its cavity, while gaseous emanations or its natural secretion of mucus may pass out into the caput coli, favor the view that an important office belongs to the appendix vermiformis. It doubtless preserves the contents of the alimentary canal from decomposition during their progress through the colon, beyond that effect claimed for the admixture of bile elements with the excrement. It is evident that ordinarily the feces do not enter the canal of the appendix owing to the duplicature at its orifice, and when by failure of this impediment, solid matters, fecal or otherwise, enter its cavity, there is no capacity in its walls for their expulsion. It hence follows that in case of such accidents we find that an inflammatory process is developed in the appendix.

The number of cases in which the appendix has been removed by operative procedures or has been obliterated by disease are thus far comparatively few, and the observations upon the effects of such lesions have not been reported, so as to throw any light upon the function of this development which characterizes a higher order of animal creation. The vague conception of its rudimentary nature seems to have taken possession of physiologists without any show of reason or any foundation in fact, so far as the study of comparative anatomy can aid in directing us to a satisfactory conclusion. If it can be made to appear that the native population of our

primeval forests who subsisted largely upon herbs and roots, with an admixture of animal food, presented any marked increase of development in this respect it may go towards sustaining this claim. But I am not aware of any such facts to corroborate this far-fetched hypothesis, nor are there any data available from history of the human race since the creation of mankind, which tend toward the confirmation of this view; and it is only an acknowledgment of ignorance on the part of those who would attempt to bolster up this theory without facts.

The increased number of disorders of the appendix vermiformis which have been recognized in these latter years might lead to an inference that it is destined to entire obliteration in the course of time, were it not evident that many affections of the appendix have been formerly ignored from the lack of proper observation in diagnosing the troubles of this region. Should it appear in the future that the appendix vermiformis may be removed with impunity, then it will only prove what has been demonstrated in the case of other important members of the body, that they were not essential to the human organism. But no one would undertake to set aside the important office of the ovaries in the role of creation, because, forsooth, they had been removed without detriment to the health and comfort of the individual subsequently. It strikes me forcibly that the practice of oöphorectomy resorted to so frequently of late for slight causes, and in some instances without indications of disease in the organ, may at no distant day be held as an excuse for cutting down upon the vermiform appendage upon the slightest provocation, for the purpose of ligating and excising it, and thus ridding the individual of further trouble from its disorders. How far this might be justified from a consideration of the great risk to life attending inflammation and perforation of its walls, in the absence of trustworthy data for an early diagnosis, depends upon the importance which may be attached to the function of this peculiar structure, and surgeons must await with interest the effects of its removal.

Whether inflammation is developed in this structure independent of mechanical irritation from the entrance of foreign bodies and the formation of fecal concretions, has not been clearly demonstrated. Clinical observations in cases that yield to treatment leave doubts as to the real seat of disease referred to this region, and so far as noted in post mortem examinations, the lesions have for the most part been traced to the presence of a mechanical irritant. While some have claimed that inflammation is set up in the vermiform appendage as a result of derangement of the digestive apparatus, and others have supposed that the entrance of germs into its cavity has developed morbid processes in its structure, the facts go to prove that such causes of diseases are rare in comparison with the troubles growing out of local irritation having a mechanical origin. It is remarkable that the presence of such foreign bodies rarely produces any serious inconvenience until perforation of the wall of the appendix vermiformis ensues, and even then the localization of the pain

and inflammation is not well defined either by the sensations of the patient or by objective symptoms recognized in a physical examination by the practitioner. There is an absence of preliminary indications, pointing to the nature of the inflammatory process at the incipency of disorders of the appendix vermiformis, which presents a problem of difficult solution for the surgeon. At this early stage there may, however, exist a certain degree of sensitiveness upon pressure immediately over the site of the appendix, and this tenderness revealed by cautious palpation may serve for the recognition of an incipient inflammation when there is no perceptible thickening or induration in the tissues of the appendix. It is clear that the causative influence, of whatever character it may be, must up to a certain point, be of gradual operation in the development of inflammation. During this stage it is of the greatest importance to be able to recognize its presence and progress. Not only the external examination should be carefully made, but a digital exploration by the rectum should be directed to the discovery of the seat of the inflammation in the appendix.

There are in most instances some concomitants of the local trouble manifested in derangement of the alimentary canal, perhaps of a reflex order, prior to the extension of the inflammatory process to the adjoining structures. In the early history of appendicitis it has been noted that there may occur either a disposition to frequent evacuations or a state of intestinal torpor, in which it is difficult to arouse the peristaltic action of the bowels either by purgative medicines or enemata. During this period the constitutional disturbance is not very marked, and yet there exist usually a febrile state with slight rise of temperature, so that nice discrimination will detect a departure from a normal condition of the system.

While the presence of fecal concretions or other foreign bodies in the canal of the appendix may be tolerated for a greater or less period without any manifestation of trouble in the ordinary performance of the functions of the intestines, there are good and sufficient grounds for the conclusion that intestinal derangement from other sources may become an exciting cause of the inflammatory process from a local irritant. The history of cases in which death has occurred from other diseases presents quite a number of instances in which there are unmistakable indications of disease in the appendix which has terminated by resolution. But it is found generally that inflammation set up in the wall of the canal by a mechanical irritant leads to perforation and extravasation of the contents, accompanied by characteristic shock and followed by diffused inflammation. This is the dividing line between two distinct phases of symptoms, and whatever may have obscured the case previously, it is for the most part well defined after this grave result.

There may be only a circumscribed involvement of the surrounding structures, exciting adhesive inflammation in the serous tissues which shut in the exudation from the cavity of the appendix and thus forming a local abscess. But usually the septic matter permeates in different directions and sets up general

peritonitis, with a train of constitutional troubles, attended with marked cerebral disturbance and vital depression.

An observation of a peculiar pain in the penis from perforation of the vermiform appendage has been reported by Tiffany, and the same marked feature occurred in my two cases of perforation which were verified by post-mortem examinations. In the elaborate paper of Fitz on "Perforative Inflammation of the Vermiform Appendix," some stress is laid upon the disturbance of the urinary and genital organs. During the first three days following the onset of the pain connected with perforation micturition is occasionally disturbed. Perhaps unusually frequent on the first day it is likely to be difficult on or after the third day. In certain instances the use of the catheter is required. The right testicle may be retracted and swollen, in which case the course of the pain is apt to be toward this gland.

We can understand how the escape of irritating matter from the appendix should cause trouble by transmitting inflammation to the contents of the abdomen, including the pelvic viscera, but it is not apparent that such disturbance of the urinary and genital organs results from general peritonitis induced by other causes, and the pain in the penis cannot be attributed to the peritonitis. If it should be found that this painful development in the penis is present in the early period of the appendicular inflammation, and is not the result of perforation, it would aid very much in making the diagnosis at this stage.

We have the authority of a standard work on Pathological Anatomy and Histology for stating that the most frequent form of inflammation of the appendix is a suppurative one. The appendix is swollen and congested; its walls are infiltrated with pus; at some points there may be necrosis and sloughing of portions of its wall. Within the cavity of the appendix we find fecal concretions or foreign bodies or nothing (but mucus). Such an inflammation may terminate in resolution, but more frequently it sets up an inflammation of the surrounding tissues. This inflammation may be either a local or general peritonitis or a suppurative inflammation of the parts about the appendix. Less frequently there is a chronic inflammation of the mucous membrane of the appendix, followed by constriction of its upper portion while the lower part is dilated into a cyst filled with mucus and serum. (DeLafield and Prudden.)

Another elaborate treatise on Pathological Anatomy and Pathogenesis states that typhlitis and perityphlitis imply inflammation of the vermiform appendage and parts around it.

The vermiform appendage is peculiarly adapted to catch and retain substances passing through the cæcum. Matters which have been swallowed—such as grape seed, apple pips, cherry stones and the like—and feces may accumulate in the appendix and set up inflammation. Sometimes these become crusted over with phosphates and carbonates and so form fecal concretions or calculi. The inflammation thus set up may extend to all the coats of the appendage, and then attack the contiguous structures, and in this way necrosis and gangrene with

perforation may be caused. The issue differs in different cases. It is comparatively favorable if the inflammation continues to be circumscribed, while the exudation is moderate in amount; protective adhesions and false membranes may thus be formed about the affected spot. It is very unfavorable when perforation takes place before adequate adhesions are formed; fatal peritonitis is nearly always induced. When perforation takes place into a part of the peritoneum shut off by adhesions a burrowing fecal abscess is produced which may burst internally or externally. Sometimes the appendage is entirely obliterated by adhesive inflammation; but if the inner or intestinal end becomes closed while the remainder continues to be patent, the natural mucus secretion may collect in the latter and distend it into a cyst. It is likewise specially noted that tuberculous and typhoid ulceration, localized in the vermiform appendage, may give rise to dangerous lesions (Ziegler).

It is not out of place to repeat what has been stated in a recent publication by me, that I cannot acquiesce in that view of pathologists which attributes the degeneration of the cæcum and appendix to a low state of vitality in their tissues, but on the contrary I hold that they are highly vitalized, and that it is from being overtaxed in the performance of functions connected with the excretitious process that they are so subject to disease.

I agree with Agnew in considering inflammation as hypernutrition, and consider that it is an effort of nature to restore the equilibrium of the circulation, which has been interrupted by a local morbid impression from the causative agent. The inflammatory process is an attempt at recuperation of the injured part, and within certain limits it is salutary; but when it transcends the powers and capacities of the organism I infer that from the undue excitation and over action of this extraordinary impulse, there is a breaking down of the forces of the organization, which leads to disintegration and death of the structures involved. By the development of inflammation in the tissues of the cæcal region nature resents an insult to the components of this organism, and when it triumphs over the difficulties encountered resolution ensues, but if it fails, ulceration and perforation occur, leading to abscesses and peritonitis.

To illustrate the important vital connection of the ileo-cæcal structure with the general organism, I may refer to the fatal results of the resection of this division of the intestinal canal of dogs reported in my paper on obscure impediments of the intestinal canal in *Gaillard's Journal*, while resection of a portion of the ileum was followed by complete restoration of the intestine. These deaths occurred in less than twenty-four hours, indicating that they were the effect of shock, which can only be explained upon the basis of a most intimate link of association of this structure with the organic nervous system.

Being therefore convinced of the traumatic reaction on the part of the cæcal division of the intestines as a consequence of injuries or morbid impressions, I would urge a prompt recourse to curative measures.

In regard to the procedure for the treatment of the diseased appendix, all writers are pretty well agreed upon using anodynes and keeping the patient at rest in the early stage with soothing fomentations over the iliac region; but some have resorted to a mild purgative or to an enema to secure evacuations, when the bowels are bound at the outset, and afterwards used opiates in full doses continuously. It may be put down as a dogma in the management of incipient cases of appendicitis, that perturbation of every kind is hurtful; and that masterly inactivity should be observed with a view to promote resolution of the inflammatory process, if this be possible, thus averting suppuration and perforation.

With the uncertainty that hangs over the diagnosis in the early stage of appendicular disorder, the expectant treatment is generally recognized as the most prudent course, but there is a growing tendency among surgeons to cut the Gordian knot by a decisive step, and use an exploratory operation by incision for determining the exact seat and character of the disturbance. Aggressive practitioners such as Bull and Weir, with others, have inculcated surgical interference at the earliest practicable period; and with the lights before us in the cases of this kind the surgeon is warranted so soon as he has good and sufficient reason to believe that there exist progressive inflammation of the appendix, in verifying this diagnosis by cutting down upon it. This course is indicated when the symptoms of a local and constitutional or general nature are such as to raise a presumption in favor of appendicular inflammation, in advance of those phenomena which usually accompany perforation. In other words, an exploratory operation is advisable with a view to learn the exact condition of the parts involved, and in the event there is no evidence of inflammatory action in the tissues of the appendix or cæcum, and no indurated mass can be discovered by palpation in either, after careful exploration, the incision may be closed without any probability of serious consequences.

If, however, on the contrary, appendicitis is verified, with or without the recognition of a solid body within its canal, it would be proper to ligate or suture the cæcal attachment, and excise the appendix vermiformis, as a security against further inflammatory developments in its structure. Thus all liability to the graver results of perforation would be most effectually obviated, and thus surgery of a destructive order would eventually prove to be conservative in preventing other grave consequences. The diagnosis of appendicular disorders cannot be guaranteed without an exploratory operation, as the statements of those most familiar with this class of cases, show most conclusively, and it cannot augment materially the risk to life, while it ensures a radical cure when disease exists.

An incision may be made outside of the right rectus muscle. The extension of the opening upward along the linea semilunaris would be indicated in case a suppurating track should be discovered, as was noted in my case of perforation of the appendix reported April 20, 1887, in the *Medical and Surgical Reporter*. This was shut off from the general peri-

toneal cavity by adhesions, so that it left the iliac fossa and reached the diaphragm on the right side, burrowing behind the liver in the form of a cloaca, which could not have been explored properly by an incision in the linea alba owing to the adhesions existing then between the intestines and the abdominal wall.

In a recent laparotomy for volvulus of the ileum near its cæcal connection such difficulty was encountered in the exploration of the seat of disease through an incision in the median line from the umbilicus to the pubes, that it was found necessary to extend my incision upwards to a point midway between the umbilicus and ensiform cartilage to effect my object. The walls of the intestine involved in the twist were agglutinated and the canal entirely occluded, with disintegration on either side of the obstruction. The cæcal segment was ligated and the other was cut beyond the gangrenous line and stitched into the median incision, after the process for artificial anus, upon closing the abdomen.

If the site of the trouble could have been known in advance, as is presumed to be ascertained in appendicitis, it would certainly have required a shorter incision in the linea semilunaris than was found necessary in the linea alba in that case. I avail myself therefore of the opportunity to modify my criticism in the paper read at Chicago, upon the opening of the abdomen at the outer border of the rectus muscle, and fully realize its advantages in operating for appendicular extravasation.

The great advantage of the several steps consists in adapting the extent of the operative procedure to the nature of the case. If there be a doubt in the diagnosis of appendicitis it is solved by a transverse incision in the iliac region, and if nothing be revealed requiring further surgical interference the opening may be closed by suturing the peritoneum with catgut in continuous form, while the fascia, muscles and skin are brought together by interrupted suture of iron-dyed silk. There will not occur much strain upon the suture in this line of union and the operation should not be carried further except when the evidence of disease in the adjacent structures demands a larger field of observation. Incisions along the linea semilunaris upward or downward with the turning aside of the corresponding flaps will afford ample scope for proceeding in cases of circumscribed abscesses or general peritonitis resulting from perforation of the appendix vermiformis.

It has been my object in this paper to direct attention to the early development of inflammation in the structure of the appendix, as its progress and termination in perforation have proved serious in most cases; and the intractability of the consequences of the extravasation of its contents, as manifested by suppuration and peritonitis, is generally recognized by surgeons.

I am not prepared to assert that a differential diagnosis of appendicitis can be assured prior to perforation, but a reasonable presumption in favor of the seat of the disorder being in the structure of the appendix, may be reached by a careful examination of the local signs and the general symptoms. In view

of the strong probability of the existence of the appendicular trouble it is claimed that an exploratory operation is justifiable in advance of any indications of perforation. We should choose the lesser evil of an unnecessary incision, rather than risk the greater, in the calamitous results of extravasation of the contents of the appendix into the peritoneal cavity accompanied by shock and followed by septicæmia. The difficulties which the surgeon must encounter from delay in resorting to an operation until perforation assures him of its necessity, should warrant him in forestalling the danger by an exploratory incision so soon as he becomes impressed with the probability of appendicular inflammation, and if realized, to be followed by radical operation.

MEDICAL PROGRESS.

SEPARATION OF THE VERTEBRÆ WITH PROTRUSION OF HERNIA.—DR. W. F. WILKINS, of Ottawa, Kansas, reports the following unique case:

Some time since we had a wind storm that did a great deal of damage, and among other houses that were demolished was one occupied by Mr. G. and his young wife. The husband was not at home at the time of the storm, but returned shortly after his house had been scattered over the vacant lots adjoining. The young wife, who was in her eighth month of gestation, while being tumbled about with the furniture and fragments of the house, was rendered insensible by the corner of a table, as she supposed, coming violently in contact with her abdomen. Pains came on the day after, and she was delivered of a male child with a peculiar "hunch on its back," as the attending physician called a hernia situated at the juncture of the dorsal with the lumbar vertebræ.

I was called to see the child on the sixth day after delivery, and found the "hunch" of a purple color and about the size of a goose-egg. After careful examination I diagnosed the case a hernia of some description, and the parents decided to have the little fellow operated on as soon as possible. The next day, with an assistant, I anesthetized the patient and proceeded to operate by cutting down upon the hernial sac. We made a longitudinal incision about 4 inches long, and found the vertebræ separated to the extent of $\frac{1}{2}$ inch. Through the opening protruded the hernia with its contents. The spinal cord had been pushed to one side. I returned the hernia without opening the sac, carefully replaced the cord and brought the vertebræ into exact apposition. Then the question arose how to keep the bones in position? After considerable deliberation, I carbolicized a silver suture and passed it through the superior intervertebral notch of the dorsal vertebra, into the superior intervertebral notch of the lumbar vertebra, through the inferior intervertebral notch of the lumbar, back on the opposite side through the superior intervertebral notch of the lumbar into the superior intervertebral notch of the dorsal vertebra, repeating this three times, and making a figure of 8 knot binding

the bones firmly in position. The external wound was closed with six catgut sutures, the whole dusted with iodoform, and the dressing finished with a broad rubber bandage.

Antiseptic precautions were observed throughout the operation, which lasted about half an hour. The wound healed by first intention and the little fellow was practically well in six days—*St. Louis Med. and Surg. Journal*, June, 1888.

TREATMENT OF ECZEMA.—MR. J. A. WETHERELL says:

Communications which in any way, by their simplicity and efficiency, tend to the advancement of the domain of practical treatment, are deserving of the consideration of all professing dermatology, and especially of those who make this branch their sole study. Having myself been a sufferer from recurrent chronic eczema for a period of five years, and consequently taken a great interest in all pertaining to it, I believe that I have discovered a new method of treating the disease. What is to follow has particular reference to the eczema simplex affecting the fingers and hands. The best procedure, possibly, will be to divide the subject into sections.

1. *Medical Treatment.*—(a) External. I dip pieces of lint, sufficient to surround the fingers separately, in pure liquor carbonis detergens, and apply them, surrounded by gutta-percha tissue, at bedtime. They are allowed to remain on all night. Considerable smarting is at first caused, but it soon disappears. On removing the lint in the morning the skin looks sodden, the former vesicles are often raised into small bullæ, which, however, ere long get absorbed and dry up. During the day the hand is left exposed to the open air or, better still, kept gloved in thin kid. They are washed every third day with lanoline coal-tar soap. To render the skin more pliable and soft a little lanoline is rubbed in every morning. In the course of three or four days the upper hardened cuticle comes off, in some cases as a whole, in others in large flakes, leaving a clean smooth surface, healthier, with more tonicity in it, and not so subject to undergo the catarrhal multiplication so characteristic of eczema. When much redness or heat exists, or there is an acrid discharge, or the implicated surface is extensive, we may moderate the strength of the alcoholic solution of coal tar by mixing it with (1 to 10 or 20) cold water; or the alkaline bathing, to be presently mentioned, may be tried. If there are only a few vesicles, I have often touched them over with a little pure carbolic acid, so as to bring away a mere shell of epidermis of limited area. Let us now briefly review a few of the other local methods adopted. As to ointments—*e. g.*, of bismuth, zinc, etc.—all I have to remark is that they are, like the tar method of Hebra, simply disgusting. Even the lowest menial does not care to parade the streets with his fingers or hand bandaged up with so many white linen rags, to say nothing of the small amount of relief producible. Huile de Cade or oleum rusci pyroligneum painted over the parts every day or two will soon dispel an ordinary case; but what about the, to most people, disgusting smell? The treatment verily is

worse than the disease. Bathing with saline or alkaline waters, such as are found at Harrogate, Bath, etc., alternating or combined with the application of spirituous alkaline lotions, I have great faith in, especially where the disease is extensive or there is much exudation, *e.g.*, in *eczema rubrum*, or the case is intractable to other means. Watering-places and the seaside, however, are not always near; nor could the patient always afford to go to them. The various gelatine, collodion, or other impermeable coatings, I consider worthless. (*b.*) Internal. Drugs, as such, are not required. To speak of treating the gouty or rheumatic diathesis by colchicum, etc., is simply ridiculous. Such terms as these should, in my opinion, be abolished, or applied only where actual attacks of gout or rheumatism exist or threaten. Should we not rather speak of such as "a constitution with a tendency to excessive formation of uric acid," or even as "uratic." To give large doses of arsenic is sheer waste of material. Very small doses often dispel scalliness; but it should only be administered in the form of some mineral water, as La Bourboule, Woodhall, etc.

2. *Dietetic Medication.*—Avoid stimulating and indigestible substances, as pickles, tea, etc. In other words, the chief materials of diet should be lean meat, milk, or cocoa to breakfast, old bread, fresh vegetables (except starchy bodies, as potatoes); no pastry. Avoid all that disagrees, especially beer and malt liquors.

3. *General Indications.*—Cleanliness in everything is very essential; clothe and diet the patient according to the changing season; avoid all local irritants; take plenty of fresh air and exercise, and by these means alone regulate the bowels and other emunctories.

In spite of all rules, cases now and then occur which withstand all treatment, baffle every effort, and cling to the sufferer for a lifetime. Such must be attacked on general principles. The plan cannot be a stereotyped one.—*Lancet*, June 2, 1888.

URETHAN AND AMYL HYDRATE IN INSOMNIA.—DRS. J. P. CROZIER GRIFFITH and ELWOOD R. KIRBY, in an article on this subject, give the records of 19 cases of insomnia treated by urethan. The records show that out of 19 cases there have been but 2 where the hypnotic action was really satisfactory. In a few others the effect was slight, or it was doubtful whether the sleep could be attributed to the action of the medicine, and would not probably have been obtained without it. In 3 cases there were unpleasant secondary effects, though in the last case the stomach was irritable to other drugs usually well borne. It may be objected that the amount generally employed (15 grains) was too small. This may possibly be true, though it is that usually recommended by the earlier writers, and which we therefore adopted. Moreover, the dose was frequently repeated in two hours or less, and in one case as much as 60 grains were given during the night without hypnotic effect. It is also true that a few cases constituted too severe a test for a simple hypnotic, as pain or persistent cough was present. We must,

however, conclude that, as far as our experience goes, urethan is an uncertain and unreliable hypnotic, though in large doses it will at times prove useful, and has advantages which at least recommend it for trial in some cases.

Amyl hydrate was used in 18 cases. The results were exceedingly favorable. In only 2 cases were there any unpleasant effects; in one a temporary delirium occurred with the first dose in a rather hysterical woman; and in the other vomiting was produced, though the stomach of this patient was unusually irritable. The taste is often complained of, but we have succeeded in disguising it to some extent with liquorice, as *v. Mering* suggests. We have also found it very satisfactory when given in gelatine capsules, each containing 20 minims. The ordinary capsule in two parts will answer nicely for this purpose, and will retain the drug without leaking. A full glass of water should be immediately swallowed after the capsule, in order to avoid offending a possibly irritable stomach. In most cases there is no danger of this occurring.

Our results show that amyl hydrate does not always succeed in producing sleep. Particularly is this the case when pain is present, or when there is very troublesome cough. We believe it, nevertheless, to be a valuable hypnotic, more powerful than urethan or paraldehyde, and to be preferred to them; and always to be chosen in place of chloral to produce sleep, though it is not so strong as the latter drug.—*Med. News*, May 19, 1888.

ELECTRICAL TREATMENT OF SALPINGITIS.—DR. APOSTOLI records a case of hydrosalpingitis treated by his method of galvanopuncture, with excellent results, and draws the following conclusions:

1. In gynecology fever and inflammation are not to be regarded as absolutely contraindicating the methodical and proper application of the galvanic current.

2. Inflammation of the uterus and its appendages, when not in the stage of suppuration, may be advantageously treated by the galvanic current. This current, though admissible in the first stages of congestion and inflammation, I consider ought not to be used when suppuration exists, unless it be brought into action in the form of an electrical cauterization, for the purpose of making a safe and certain outlet for the matter through the vaginal wall.

3. A galvano-caustic puncture is a valuable means by which we may gain two ends: first, to check the outbreak of inflammatory action or to stop its progress; secondly, to give an easy exit to a collection of fluid, by the falling of an eschar, in any case where the cavity containing such fluid is accessible through the upper part of the vaginal wall.

4. Every inflammatory exudation presenting itself in the vaginal cul-de-sac may be treated by means of the galvanopuncture, except under the condition which I shall hereafter mention.

5. This method may be easily and harmlessly employed for the treatment of certain cases of salpingitis and hydrosalpinx, on account of the close relation between the tumors and the vaginal wall.

6. In making every galvano-puncture, all the rules which I have hitherto laid down concerning the seat of the puncture, its depth, the size of the trocar, the antiseptic precautions, the repose of the patient, etc., must be scrupulously observed.

7. Two negative galvano-punctures, vaginal only, were sufficient in one case of hydrosalpinx to bring about very quickly an important anatomical change, and complete symptomatic cure.—*Brit. Med. Jour.*, May 12, 1888.

PEPPERMINT WATER IN PRURITUS PUDENDI.—DR. AMAND ROUTH calls attention to the value of peppermint water in pruritus pudendi. In pruritus due to pediculi, ascarides, an irritable urethral caruncle, an endocervical polypus, early cancer of the cervix, distension of Bartholini's ducts or glands, the leucorrhœa of vaginitis, endocervicitis, and metritis, or the irritating discharges of advanced carcinoma uteri, or to a gouty or diabetic diathesis, peppermint water excels all others, cocaine inclusive, in affording relief, whilst endeavors are being made to remove the cause. The agent here alluded to is peppermint water used as a lotion. The B. P. preparation answers well, but is bulky for carrying about, and is incapable of concentration unless rendered alkaline. This is best done by borax, as being in itself soothing and antiseptic. Patients can easily make their own lotion, as required for use, by putting a teaspoonful of borax into a pint bottle of hot water and adding to it 5 drops of oleum menthæ piperitæ and shaking well; the parts affected to be freely bathed with a soft sponge. If no cracks or sores are present, this lotion will remove the itching, but if there be eczema or a rawness from scratching, it is inapplicable. Olive oil, with 5 grs. of iodoform to the ounce, is then more useful. The greatest and most permanent relief is afforded in the neurosial form, especially in the pruritus which often accompanies pregnancy. It is also very useful in the pruritus which occurs at the climacteric, or in elderly women, in whom it may be only part of a general pruritus, and also in those cases of women of all ages where the urine simultaneously becomes of very low specific gravity without any evidence of having a gouty or granular kidney as a remote cause.—*Brit. Med. Jour.*, April 14, 1888.

KEPHIR AND ITS USE AS AN INFANT FOOD.—DR. LONGSTREET TAYLOR has found kephir useful in feeding marasmic and hand-reared infants. He considers that it is superior to peptonized preparations and konmiss. The former is theoretically perfect, but practically not always satisfactory, either because the process is carried on too far or because injurious ptomaines are introduced during the process of preparation. The latter is too expensive and too difficult to obtain ever to be of much general service. Kephir is a product of the fermentation of cow's milk by which the thick coagulum which would otherwise form is broken up into fine flocculent flakes, which are much more amenable to the influence of the gastric juice. It must not be used after it has become too old and sour, as in this state it is neither palatable nor digestible. For young infants only the weak or

young kephir in the first stage of fermentation should be used. It should be given lukewarm, *i. e.*, about 75° F. If the infant is less than a month old it may be diluted with one-third of water, the proportion of water being gradually diminished so that when the infant is six weeks old it may take the kephir undiluted.—*Arch. of Pediatrics*, May, 1888.

MODE OF OBTAINING VACCINE LYMPH WITHOUT PUNCTURING THE VESICLES.—In the *Brit. Med. Jour.*, April, 1888, DR. GRIGG describes a method of obtaining lymph without puncturing the vesicle, which does away with the chance of contamination with blood, and lessens the risk of subsequent inflammation. It is as follows: A small bead of pure glycerine is dropped upon the centre of each pock, then the top of each pock is rubbed with a smooth blunt instrument (the round glass head of a shawl-pin does excellently). After the lapse of two or three minutes the bead of glycerine will have increased to nearly double its size, especially if the vesicle contain a good supply of lymph. If necessary, a second drop of glycerine may be applied after the first has been used, and even a third. Another advantage in this plan is that it is not necessary to hold the infant's arm, and consequently it does not become troublesome and difficult to convey the lymph from one arm to another.

CONDURANGO.—PROFESSOR OSER, of Vienna, who has been making trials of condurango bark in carcinoma and other diseases of the stomach, finds that it has an excellent effect on the appetite and that it relieves over-sensitiveness. Some patients can take it for months without any unpleasant symptoms, while in others it soon sets up nausea, which cannot be prevented either by the simultaneous administration of correctives or by the employment of different preparations of the bark, such as the vinum or the liquor. Condurango appears to Professor Oser to deserve a place in our materia medica as a symptomatic remedy, but as to its exerting any specific action on malignant disease, he still holds to his old dictum that the only hope of cure in cancer of the stomach by means of drugs lies in the possibility of a mistaken diagnosis.—*Lancet*, May 19, 1888.

HYPODERMIC INJECTIONS OF CALOMEL IN SYPHILIS. DR. NIKOLAI N. RUSANOFF, of Novokhopersk, having employed Scarceniz-Smirnoff's method in a great number of cases of syphilis, has come to the following conclusions: 1. The method is very convenient, not only in the hospital practice, but also in out-door patients. 2. The best results are obtained in inveterated neglected forms of the disease. 3. Since a maximal effect is produced by the very first injection, the method may be usefully employed also as an auxiliary means for a differential diagnosis in doubtful cases. A single injection of calomel in a non-syphilitic person is said to be entirely free of any injurious effects. Dr. Rusanoff used to inject calomel in the dose of 3 grains every three or four weeks.—*Tratsh*, No. 8, 1888.

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JUNE 23, 1888.

A NOVELTY IN HEPATIC SURGERY.

In the *American Journal of the Medical Sciences*, for June, DR. L. McLANE TIFFANY, of Baltimore, records two cases, of abscess of the liver and stone in the gall-bladder, in which the important part of each operation was the shutting off of a portion of the liver by suture from the general cavity of the belly, so that treatment could be applied irrespective of the neighboring but not entirely investing peritoneal sac.

In the case of the abscess an incision 3 inches long was made just below, and parallel to, the right costal cartilages, and carried down to the peritoneum. When hæmorrhage was arrested the peritoneum was opened for a distance of 2 inches, and the liver, which was not adherent, was exposed. Slight traction on each lip of the wound caused the edges of the peritoneum to open widely, showing an oval area of liver surface, 1 by 2 inches. The peritoneum edge and liver surface were then sewed together by close continuous sutures with a fine needle and silk, by which the general cavity of the peritoneum was shut off from the wound, and the operator had a button-hole of extraperitoneal liver at disposal for the operation, which was then completed.

The second case is particularly interesting from the fact that the gall-bladder was opened through the liver, since digital exploration failed to detect the gall-bladder, and the intestines were adherent to the under surface of the liver and to the gall-bladder, which was felt through the intestines after the incision was sufficiently enlarged. In view of the success of the operation in the case of abscess, the operation

was done as follows: A slender hollow needle was passed directly through the liver from above downward into the gall-bladder, and on aspirating a perfectly clear fluid entered the syringe. It was thought that if adhesions prevented the gall-bladder from projecting beyond the liver edge the same would prevent extravasations into the peritoneal cavity; so the parietal peritoneum was sewed to the upper surface of the liver, making a "buttonhole" 1.5x2 inches, the rest of the peritoneal incision being also closed, and with the needle, which remained *in situ*, as a guide, the gall-bladder was reached by cutting through the thickness of the liver, the incision being of such a size that the operator's fingers would fill it. The gush of blood that followed the use of the knife was arrested by the forefinger thrust into the wound. The finger was not removed for three minutes, and no hæmorrhage followed its removal. Several stones were detected by the end of the finger, and were removed with the forceps. A rubber drainage tube was left in the gall-bladder, and in one month from the time of operation there was perfect union of the wound.

Dr. Tiffany's cases show two things: that hæmorrhage from a wound of the liver is not the surgical *bête noir* it has been supposed to be, and that it is amenable to pressure applied directly to the bleeding surface, as is shown by the case of stab-wound of the liver treated successfully by Burckhardt, described in THE JOURNAL, Vol. viii, p. 323, and Vol. ix, p. 62, in which the furious hæmorrhage was arrested by a tampon of iodoform gauze. The cases show, in the second place, that by shutting off an area of the liver from the peritoneal cavity there is a distinct gain for purposes of drainage, and lessened risk of septic infection. One of the chief advantages of the method, as can be readily seen, is the rapidity with which it can be performed, so that it is readily applicable in cases of stab or gunshot wound of the liver, in which a more tedious method would be out of the question.

DR. TURNBULL'S TREATMENT OF ACUTE AND CHRONIC OTORRHEA.

IN THE JOURNAL of June 9, 1888, DR. LAWRENCE TURNBULL assigns a high value to inflation of the Eustachian tube as a means of treatment in suitable cases, but principally of catarrh with perforation. It often proves very dangerous in unskilled hands in "otorrhea" on account of its effects on the circulation, local effects of an excessive pressure, and also the blowing back of purulent secretions from the nose and pharynx into the ear. Before practicing inflation, the nostrils should be cleansed thoroughly.

The patients, especially children, should be taught to keep the nostrils clean. Many children do not know how to blow the nose. The discharge of purulent matters from the ear into the pharynx, setting up secondary troubles, is not a matter of theory with Dr. Turnbull, but is proved by observation. A very distressing case of bilateral perforation came under Dr. Turnbull's notice in which hæmoptysis and gastric hæmorrhage had been diagnosed from the vomiting of bloody discharges which he describes as having been swallowed from the ear, via Eustachian tubes. At the post-mortem examination, the stomach contained a pint of putrid and bloody matter.

Dr. Turnbull does not approve of syringing, as a rule, and says it should never be done except by the physician. In the first place, a good syringe is a rarity, and an expensive rarity. Even if the instrument is good, in improper hands it may tear the membrane. He claims to have seen such accidents occur, to the entire destruction of the membrana tympani.

THE MALADY OF THE EMPEROR FREDERICK III.

According to the cabled reports of last Monday, the disease of which Frederick III died was cancer of the larynx. The autopsy proved that the larynx was completely destroyed by cancer, and that purulent bronchitis existed. There was also inflammation of the finer ramifications of the bronchial tubes into which purulent particles had entered. The whole larynx was in a state of suppuration, and presented a soft lumpy mass, with scarcely any trace of cartilaginous structure remaining. There was nothing to show the existence of perforation of the walls separating the trachea and œsophagus. The choking sensation from which the Emperor suffered during the last of his life, which was attributed to such a perforation, appears to have been really due to collapse of the larynx, owing to the destruction of the cartilage. The direct cause of death is given as paralysis of the lungs, according to the cable reports.

Dr. Mackenzie, in his report on Emperor Frederick's case, says: "In my opinion the disease from which the Emperor died was cancer. The morbid process probably commenced in the deepest tissues of the cartilaginous structures of the larynx and they became affected at a very early date. The small growth which was present when I first made an examination was removed by me by several operations, and all the portions removed were submitted to Professor Virchow. He was unable to detect any evi-

dences of the existence of cancer. The examinations made in the beginning of March by Professor Waldeyer led to the belief that cancer was then present. Whether the disease was originally cancerous, or assumed a malignant character some months after its first appearance, it is impossible to state. The fact that perichondritis and carysis of the cartilages played an active and important part in the development of the disease doubtless largely contributed to make it impossible to form a decided opinion as to its nature till quite a recent date."

To Dr. Mackenzie's report Dr. Hovell adds the following: "In so far as my observations since last August permit me to form an opinion, I concur entirely in Dr. Mackenzie's view."

MICHIGAN STATE MEDICAL SOCIETY.

The programme of the twenty-third annual meeting of this Society was not only elegant in its appearance, but admirable in the arrangement of the work of the Society. The general meetings for transacting the business of the Society were to be held in the morning, and the reading and discussion of papers occupied the afternoons in three Sections—Practice of Medicine, Surgery, and Obstetrics and Gynecology. Each Section was provided with a full complement of papers on important subjects, and by this plan more than three times as much work would be accomplished as could be done if all were attempted in general sessions, as is done by nearly all our State Medical Societies. The annual meeting was recently held in Detroit and proved highly satisfactory to the members in attendance. If all our larger city and County Medical Societies would provide for having their scientific and practical work done in Sections, each holding meetings as often as the amount of work might require, while the general meetings for business and social purposes might be only annual or semi-annual; and if all the State Societies were made up of delegates from the local societies and would follow the example of the Michigan Society, the whole system of medical organizations would be in harmony with that of the American Medical Association, and afford the devotees of every legitimate specialty ample opportunity to cultivate their own field in harmony and affiliation with every other, and thereby preserve the unity and social integrity of the whole profession.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.

To answer several inquiries it is proper to state

that three large volumes of the Transactions are through the press and the fourth is well advanced. But a fifth will be required to complete the publication. The work is progressing as rapidly as is consistent with good quality of work, and with a fair prospect of completion within the next two months. All inquiries regarding the volumes already published should be addressed to John B. Hamilton, M.D., late Secretary-General, and Chairman of the Publication Committee, Washington, D. C.

EDITORIAL NOTES.

AN ASSOCIATION OF SANITARY INSPECTORS is one of the new organizations of Great Britain. There is a national association, with sub-associations. One of the provincial associations, says the *Sanitary News*, at a meeting held in Liverpool lately, passed resolutions to the following effect: "That the interests of the public health demand that all candidates for the position of sanitary inspector shall be duly qualified and certified by examination held under and directed by authority of the Government; that fixity of tenure be assured during good behavior; that the minimum scale of salary for sanitary inspectors be fixed by the Local Government Board; that one simplified Public Health Act, applicable to the whole kingdom, embodying these amongst other changes is necessary for the efficient discharge of the duties affecting the public health which devolve upon the sanitary inspectors."

THE SALE OF UNWHOLESOME FRUIT.—It is at this season of the year that the health of city dwellers, and especially of the young, is endangered by unripe or over-ripe fruit. Those most endangered are the children of the poor, and the wandering waifs of the streets, since over-ripe and even partly decayed fruit is exposed for sale at "cut prices" by the dealers. This is being done now in Chicago, and probably in other cities, and city health authorities would do well to put a stop to the practice at the beginning of the hot weather. In Chicago the fruit-stands and street-venders do no small business in over-ripe and partly decayed bananas, which, when purchased by a small boy is a double engine of destruction, since the peel is usually deposited on the side walks before the boy begins to jeopardize his own health by eating the fruit.

THE CHICAGO GARBAGE CREMATORY is doing satisfactory work, and a careful record is kept of the proportion of fuel consumed to the amount of material burned.

GLASS DRAINS AND PIPES for the plumbing of houses have been recommended by a Chicago architect, chiefly from the fact that the material is not acted upon by the agents that usually corrode pipes of other material, and is safe from the attacks of rats.

THE "CANADA MEDICAL AND SURGICAL JOURNAL" will soon appear as the *Montreal Medical Journal*.

A TRAINING SCHOOL FOR COLORED NURSES is connected with the Spellman Seminary, Ga.

SOCIETY PROCEEDINGS.

GERMAN MEDICAL SOCIETY OF PHILADELPHIA.

Meeting of May 14, 1888.

VICE-PRESIDENT LAWRENCE WOLFF in the Chair.

DR. CARL SEILER read a paper on

HYPERTROPHY OF THE TONSILS.

He said that as yet we did not know whether the tonsils performed any physiological function, or not, but that the view was prevalent that these organs were residuary and of no use in the economy. He stated further that in the normal condition they were invisible and became visible only by a hypertrophy of their tissue. This view had lately been forcibly expressed by Dr. Daly, of Pittsburgh, and found a proof in the fact that even when slightly hypertrophied in youth they usually disappeared at the age of 25 or 30 years. They had no connection whatsoever with the genito-urinary apparatus, as had recently been asserted.

After briefly describing the minute anatomy of the tonsil, he entered upon the subject proper, and said that we could recognize three distinct varieties of hypertrophied tonsils: first, the ordinary soft hypertrophied tonsil most commonly met with in childhood and early youth, and rarely found in adult age. This variety is characterized by simple enlargement of the tonsillar tissue, with a corresponding increase in the size of the crypts, which latter mostly contain plugs of white, cheesy secretion. This secretion in some cases becomes putrid and emits an extremely disagreeable odor. This simple hypertrophied tonsil is frequently the seat of periodical acute inflammation, which may or may not produce parenchymatous suppuration. Coexisting with this chronic tonsillar hypertrophy we usually find a chronic nasopharyngeal catarrh and more or less hypertrophy of the pharyngeal tonsil. These conditions give rise to a variety of symptoms, the most prominent of which are interference with proper vocalization and articulation, insufficient aeration of the blood, gastric disturbances and frequently catarrh of the middle ear.

The second variety is the so-called scirrhus tonsil first mentioned by Dr. Jarvis, of New York, which is characterized by a smooth exterior surface and a

hard, cartilaginous feel to the touch of the finger or probe. The crypts are usually not enlarged, and if so, rarely contain the cheesy secretion. This variety of hypertrophied tonsil is met with usually in young adults, and is rarely, if ever, the seat of acute periodical inflammation. The hardness is imparted to it by a deposit of connective tissue between the cellular elements, and particularly around the blood-vessels, canalliculizing them, and thus depriving them of their contractility. They interfere by their presence with vocalization and articulation, and naso-pharyngeal catarrh as well as chronic laryngeal inflammation, frequently coexist with them.

The third variety may be called the ragged hypertrophied tonsil, and is nothing but the result of the first variety having been the seat of frequent tonsillar abscesses which have caused parts of the tissue to slough away, leaving a ragged mass of tonsillar tissue between the faucial pillars. It is usually found in young strumous adults and is perhaps the most dangerous to the general health, inasmuch as it gives lodgment to septic material and thus in many cases produces chronic septicemia.

Dr. Seiler then entered into the consideration of the treatment of hypertrophied tonsils, and said that in all cases the offending masses should be removed, but that the method by which this was to be accomplished should be carefully considered and adapted to the requirements of each individual case. All chemical caustics applied to the surface of the tonsil were worse than useless, as their application gave rise to a great deal of pain and had to be kept up for a considerable length of time to produce any results at all. In the ordinary soft variety the tonsil was best removed by ablation with the tonsillotome. Care should, however, be taken not to wound the edge of the anterior pillar, because a small branch of the tonsillar artery runs close to this edge and when cut gives rise to hæmorrhage difficult to control. If the anterior pillar is adherent to the tonsil, it should be loosened, and if this is not possible owing to the bands of fibrous tissue connecting the pillar with the tonsil being too strong to be torn, the tonsillotome cannot be used with any degree of safety and the galvano-cautery knife should be used. After the projecting portion of the tonsil had been ablated, the cut surface should be brushed over with a 60 grain solution of nitrate of silver to cause contraction of the capillaries and to cover the wound; and any secondary hæmorrhage, which, however, rarely occurred, should be controlled with a strong solution of tannic and gallic acid used as a gargle. The old method of removing the tonsils with the volcillum and bistoury the lecturer said was unsafe, as the edge of the anterior pillar, even when not adherent, was too easily wounded by the heel of the knife. Total extirpation or enucleation was also dangerous, besides being unnecessary except in the extremely rare cases of cancerous growth in the tonsil.

The safest and only applicable one in cases of ragged tonsil was the galvano-caustic method of removing hypertrophied tonsils. In applying this method the galvano cautery knife should be heated to a bright red heat, and should then be pressed into

the tissue of the tonsil by entering one of the crypts and cutting with it from within outward, so that the eschar resulting from the burn can easily fall off and does not become impacted in the tissue of the tonsil. This procedure Dr. Seiler said did not give rise to any pain, and should be repeated at intervals of a week or ten days, and from four to six applications usually sufficed to reduce the tonsils to a size compatible with health and comfort of the patient. Under no circumstances should any preparation for the removal or reduction of hypertrophied tonsils be undertaken while the organ was in a state of acute inflammation. In the case of the ragged tonsil, scraping the tonsillar tissue from the capsule with a sharp curette had been recommended, but this method was not only very bloody, but also painful, and on that account the galvano-cautery was to be preferred.

For the removal of the scirrhus tonsil, Dr. Seiler recommended the Jarvis snare as the best and safest instrument. The steel wire loop should be laid around the enlarged tonsil and by turning the screw should be gradually decreased in size until the portion encircled by the wire was cut off. If done slowly the operation occasioned very little pain and time was given for the edges of the rigid vessels to become agglutinated so that little or no hæmorrhage resulted. The best way, he said, was to start the snaring process and then let the patient turn the screw himself, trusting to him that it was not done too quickly; for the patient would tighten the loop until he felt the pain and would then stop, to begin again when the pain had ceased. The time occupied in thus removing a scirrhus tonsil was from two to three hours.

DR. MUEBLECK suggested that many of the supposed cases of hæmophilia were cases of scirrhus tonsil, in which the canalliculization of the vessels caused profuse and persistent hæmorrhage after ablation. For this reason he asked the lecturer to definitely state the diagnostic differentiation between the soft and fibrous forms.

DR. VANSANT desired the judgment of Dr. Seiler upon the use of alkalis in acute tonsillitis—especially of sodium bicarbonate and borax. He inquired furthermore, whether, after repeated attacks of inflammation, the resulting hypertrophy ever spontaneously disappears. In the matter of diagnosis, it should be borne in mind that other tissue changes than simple inflammation and hypertrophy may have their seat in the tonsils. It is a question whether the initial lesion of syphilis would be likely to lead to such error. The cases he had observed presented a mere superficial ulceration without induration. In none of the cases reported by Tchisbriakoff, Peterson, Tomasheosky and Sevek within the past year, was the fact of induration mentioned. He would like to know whether this peculiarity is constant in a lesion in this location.

DR. WOLF had had considerable success in aborting acute tonsillitis by Dr. Seiler's method, viz., by penciling with a 25 per cent. solution of silver nitrate. The attacks were, however, aborted only when the application was made within the first twenty-four hours. Nevertheless even a later appli-

cation was generally successful in preventing supuration—besides giving great comfort to the patient by reducing the tension and pain.

DR. FRIEIS noted the frequent association of tonsillar hypertrophy and otitis media, but was not clear in his mind whether the same is to be attributed to impeded nasal respiration (mouth breathing), or to the septic influences from the crypts, or to mechanical obstruction of the mouth of the Eustachian tube by the swollen gland. Dr. Miller, in using the caustic knife, had frequently had it stick in the tonsillar tissue and had caused pain and hemorrhage by its violent removal. This difficulty was due to a too early shutting off of the current and could easily be avoided. The knife should be hot when applied and removed. He had used the galvanic-caustic more often than the guillotine—even in the soft variety—owing to an unconquerable prejudice on the part of the patients against any cutting operation. For the same reason the blade must be heated after it is in the mouth, so that the patient may not see it. If both tonsils were treated at one sitting, deglutition would be rendered unnecessary painful. He treats them, therefore, in alternation, with two sittings per week. He reduces them so that they do not project beyond the pillars and leaves the rest to cicatricial contraction. A most useful battery for the purpose is that of Dr. Seiler. The method of gouging out the growth with the finger is not only barbarous but dangerous. He would not agree with the lecturer that the tonsils are necessarily in a pathological state when they fill the space between the anterior and posterior pillars, and do not extend beyond them.

DR. WEED quoted the two cases reported by Croly of primary sarcoma of the tonsil, in both of which incisions were made to evacuate the supposed abscess. Such an affection might be mistaken for a hypertrophy even more easily than for quinsy, and the guillotine might evoke a dangerous hemorrhage. In cases of acute tonsillitis the diagnosis is rendered difficult by the fact that a variety of affections have here their local manifestations. Le Gendre considers the tonsil the site of the initial lesions of scarlatina and diphtheria, and Fraenkel calls attention to other varieties of septic infection from this gland. Le Brun looks upon all tonsillitis as infectious and regulates his therapeutics accordingly. On the other hand, Froelich reports a group of cases in some of which the tonsil seems to have been the seat of local lesion, although not the point of original inoculation. The first case was one of so-called follicular tonsillitis followed by a fatal suppurative peritonitis. At the autopsy Froelich and his assistant sustained slight wounds with a resulting follicular tonsillitis. A number of the household developed similar symptoms. In addition to the cases quoted by Dr. Vansant of syphilitic inoculation, are a number collected by Dr. Delavan in the *Annual of the Universal Medical Sciences*, just published. There being therefore so many varieties of acute tonsillar inflammation, it is idle to vaunt any one remedy as being suited to all cases. The strong solution of nitrate of silver had in the speaker's hands seemed to abort the attacks of recurrent quinsy, or had at least modified

the process, but had failed in other forms of inflammation. He was unable to state whether the virtue of the silver salt was in its astringency or in its germicide power. In tonsilotomy for hypertrophy it is, according to the experiments of Zuckerhandl, impossible to wound the internal carotid without cutting the wall of the pharynx.

DR. SEILER, in closing the discussion, said that the differentiation between the soft and scirrhous varieties of hypertrophy was easily made by the sense of touch, the former being soft and doughy, while the latter was hard and cartilaginous, and never occurs before the age of puberty. He believed that an initial lesion of syphilis upon the tonsil was never indurated. This was owing to a poverty of submucous connective tissue. An early diagnostic sign is glandular involvement at the angle of the jaws. The much-vaunted alkaline treatment of acute tonsillitis with bicarbonate of soda or borax had in his experience given no results greater than a temporary alleviation of the pain. The only abortive treatment with which he had had success was that mentioned by Dr. Wolff. There is no doubt that hypertrophy of the tonsil does sometimes disappear with the advancing age of the patient. This is due to a physiological atrophy of the glands. The periodical attacks of acute inflammation may be prevented by a proper tonic treatment, attention to hygiene, and particularly by ablutions of the neck and chest morning and night.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Held at Philadelphia, June 5, 6, 7 and 8, 1888.

TUESDAY, JUNE 5—FIRST DAY.

The thirty-ninth annual meeting of the Medical Society of the State of Pennsylvania was called to order by THE PRESIDENT, DR. R. J. LEVIS, of Philadelphia, on June 5.

Prayer was offered by the Rt. Rev. O. W. Whitaker, D.D., Bishop of Eastern Pennsylvania.

The Address of Welcome was delivered by Dr. John H. Packard.

After reports of officers and committees had been received and other routine business transacted, the following amendments were adopted:

"That the censors of the appropriate district or districts shall have power to determine whether a resident of one county shall be entitled to become a member of an adjacent County Society, which may be more convenient for him to attend."

"The Committee on Pharmacy shall consist of five members, to be appointed annually by the President, whose duty it shall be to consider all matters pertaining to pharmacy, and who shall be empowered to represent this Society in conference with a similar committee to be appointed by the Pennsylvania Pharmaceutical Association. They shall report annually the result of their joint labors."

Dr. Edward Jackson, from the Committee on Medical Education, offered the following resolution, action on which was postponed until Wednesday:

Resolved, That a committee of five be appointed by the President to secure the cooperation of County Medical Societies and individuals interested in the subject, to urge upon the State Legislature the enactment of a law essentially identical with that proposed by this Society and favorably reported to the House of Representatives at the last session of the Legislature.

AFTERNOON SESSION.

The first business was the

ADDRESS IN HYGIENE,

by DR. TRAILL GREEN, of Easton.

He referred to the great importance of pure air and the necessity of providing adequate ventilation in public and private buildings. The importance of bathing was also alluded to, and the necessity of keeping cellars perfectly clean was insisted upon. The fear of suffering in the hour of death was then considered, the speaker holding that this fear was rarely realized. Even in true croup death is accompanied by stupor which prevents suffering. In regard to the fear of the possibility of being interred before life has become extinct, the author stated that a careful investigation had shown that there was not a well authenticated case in which this had occurred.

The dread of being eaten up by worms after burial was referred to. An inquiry made among those whose business is connected with cemeteries, etc., shows that worms are never seen in bodies buried in the ground. Worms are never seen more than one foot below the surface.

DR. EDWARD R. MAYER, of Wilkesbarre, then delivered the

ADDRESS IN MEDICINE.

The main portion of the address was devoted to a consideration of intra-corporal antiseptics, to which the author attached considerable value. He had for a quarter of a century employed the sulphites. He had employed these apparently with success as prophylactics in scarlet fever, measles, diphtheria and pertussis. Gastric and intestinal antiseptics have proved of service in gastro intestinal affections. The value of antipyretics and analgesics was then briefly referred to.

Dr. Hugh Hamilton, of Harrisburg, read a paper entitled *The Chemical Factor in Disease*.

DR. WILLIAM PEPPER then read

A CONTRIBUTION TO THE CLINICAL STUDY OF ALBUMINURIA.

The paper was based on the records of the chemical study of the urine in the cases occurring in his private practice during the past eight months. The examinations had been made by Dr. J. P. Crozier Griffith. The total number of cases was 239. Of this number albumen was not found in 96 cases. The number in which albumen was found, continuously or at some period, was 143. As a rule, the test employed was that of Heller. It is therefore evident, he said, that there must be some forms of albuminuria not significant of organic disease of the kidneys. In 80 of the

cases in which albumen was found, its presence was capable of explanation from the presence of pus or blood. In many cases, however, it was difficult to decide that the quantity of blood, pus, or other accidental addition to the urine was sufficient to explain the amount of albumen found. In 41 cases the presence of albumen could not be explained in this way, but yet in none of these could casts be found, although looked for with great care. In only 22 cases of the 143 were casts found.

DR. FRANK WOODBURY, of Philadelphia, read a paper on

THE EFFERVESCENT FORM FOR THE ADMINISTRATION OF CERTAIN REMEDIES.

Attention was called to the fact that the last Pharmacopoeia contained only two preparations intended to be administered in effervescent form. These are liquor magnesi citratis and magnesi citratis granulat. Sparkling wines and malt liquors owe most of their palatability to the excess of acid which they contain. Modern works on therapeutics say very little with reference to the action of carbonic acid gas as a medicinal agent. It plays as important a part in the animal as in the vegetable economy. Effervescing preparations were much employed by practitioners of a generation ago. The effervescing form of medication affords a valuable means of administering nauseous and disagreeable medicines. Small quantities of alcohol are much more stimulating when given in the effervescent form than in the shape of spirits. Malt liquor is, when properly given, a better hypnotic than bromide of potassium. It is useful in gastralgia or nausea, and in renal colic. It has been found useful as a food and stimulant in children suffering with diphtheria. Effervescing draughts are useful in fevers, being grateful to the patient and tending to reduce the temperature and favor the action of the skin. In local affections of the digestive tract these agents are commonly resorted to. In true migraine they may be given with the addition of a small quantity of deodorized tincture of opium.

The author concluded the paper with the hope that the next committee of revision of the Pharmacopoeia might be induced to extend the list of granular effervescent salts and, if possible, establish uniform and standard formulæ for the carbonated and other mineral waters, both natural and artificial, that are now so largely used by the profession and the public

WEDNESDAY, JUNE 6—SECOND DAY.

THE PRESIDENT, DR. R. J. LEVIS, then delivered the *President's Address*:

THE TRADITIONAL ERRORS OF SURGERY.

Prejudice has done more to perpetuate error than any other cause. American text books have now reached such a high position that it is necessary to rely to but a slight extent on foreign authorship, yet an examination of the announcements of seventy-two regular medical colleges shows that, while 186 books of foreign authorship are recommended, only 157 American works are advised. Reference was made

to want of thoroughness in the teaching of practical anatomy, largely the result of tradition.

Very few great advances have been made in medicine without being subjected to the opposition of prejudice. No sadder instance of traditional prejudice can be found than that shown by the opposition and long probationary trial of ovariotomy. The tardy recognition of the importance of antiseptic surgery is a discredit of the time, nearly 30 years having elapsed since its introduction by Lister. The tendency to the complication of surgical instruments and apparatus was next considered. An instrument is rarely made straight if it is possible to make it crooked.

Other traditional errors referred to were delay in the operative treatment of depressed fractures of the skull until symptoms appear; delay in the operative treatment of strangulated hernia until inflammation has appeared; the failure to recognize the distinctly local origin of certain malignant growths and the possibility of their eradication by thorough operation; ignorance of the fact that the tourniquet may well be discarded in favor of the use of the elastic bandage; the reliance on styptics to the disregard of more efficient means of checking hemorrhage.

Dr. A. Lowry Sibbet, of Carlisle, Pa., then read *A Brief Review of the Decisions of the Courts concerning the Registration Act of 1881*.

Dr. JOHN H. PACKARD made some remarks on

THE PROPOSED STATE BOARD OF MEDICAL EXAMINERS.

The speaker stated that there existed a committee of this Society charged with perfecting a plan and urging the establishment of a State Board of Medical Examiners. He had grave doubts of the expediency of this, and criticised the provisions of the proposed bill. Objection was made to the provision for a mixed board of regular and irregular practitioners. The proposed bill says that no one shall be excluded or rejected because of his or her adhesion to special system. This was clearly in opposition to the Code of Ethics of the American Medical Association.

Dr. L. F. FLICK, of Philadelphia, then read a paper on

THE CONTAGIOUSNESS OF PHTHISIS.

It was held that phthisis was contagious, and the evidence bearing upon this view was offered in detail, and the objections urged to this idea were considered.

Dr. GIVEN stated that he had had fifteen years' experience as physician to various Indian agencies in the Southwest. Very little reliance was to be placed upon published statistics. He had found that among the most degraded tribes of Indians phthisis was quite common, but as they became more civilized the disease decreased, and among those who had some white blood it was at its minimum.

Dr. EARLY, of Fayette Co., in a practice of forty-three years, had never seen any evidence of the contagiousness of phthisis.

Dr. THOMAS J. MAYES, of Philadelphia, held that the evidence advanced by Dr. Flick was not sufficient to prove the contagiousness of the disease.

Dr. E. T. BRUN, of Philadelphia, thought that investigations on this subject showed that there was

increasing evidence of the strict inoculability of tuberculosis.

AFTERNOON SESSION.

REPORT OF NOMINATING COMMITTEE.

President—J. B. Murdock, Allegheny.

Vice-Presidents—L. H. Taylor, Luzerne; Benj. Lee, Philadelphia; W. W. Dale, Cumberland Co.; W. S. Rowland, York Co.

Permanent Secretary—Wm. B. Atkinson, Philadelphia.

Recording Secretary—Charles W. Dulles, Philadelphia.

Corresponding Secretary—J. H. Musser, Philadelphia.

Treasurer—O. H. Allis, Philadelphia.

Committee on Publication—Drs. Edward Jackson, G. W. Guthrie, S. H. Gamp.

Dr. THEOPHILUS PARVIN, of Philadelphia, then delivered the

ADDRESS IN OBSTETRICS.

The first portion of the address was devoted to consideration of the recent advances made in the use of electricity in obstetrics and diseases of women. Electricity in the induction of premature labor has been recommended, but has only a limited value and usually must be supplemented by other means to secure full dilation. Electricity has been used with success for the destruction of the living fetus in extra-uterine pregnancy. So far no unfavorable result has followed the use of the faradic current. Such favorable results have not followed the use of the galvanic current. The day is, however, coming when extra-uterine pregnancy will be treated by abdominal section as soon as recognized.

The faradic and galvanic currents have also been found of great service in the treatment of pelvic cellulitis and fibroid tumors.

The suggestions made with reference to the treatment of placenta prævia were spoken of. The author concluded that the proper plan was to pursue expectant measures when there is no severe hemorrhage. If there is serious bleeding premature labor should be at once induced. If hemorrhage occurs after the viability of the child, labor should at once be brought on. Probably the best method is to use Barnes' hydrostatic dilators with detachment of the placenta as recommended by Barnes.

The use of antiseptics in midwifery was insisted upon. Reference was also made to the results obtained by the improved Cesarean operation. The paper closed with an earnest protest against the indiscriminate performance of operations for the removal of the ovaries.

Dr. JOSEPH PRICE and Dr. C. F. PENROSE repeated the experiments of Dr. N. Senn showing the use of

RECTAL INJECTION OF HYDROGEN GAS AS AN INDICATION OF INTESTINAL WOUNDS.

Experiment 1.—A dog was etherized, and the gas injected in the rectum was ignited at the end of a tube inserted into the œsophagus.

Experiment 2.—A stab wound was made in the upper portion of the small bowel. The gas appeared at the abdominal wound and was ignited at the end of a tube inserted into the opening.

Experiment 3.—A gunshot wound was made and its existence demonstrated in the same way.

DR. M. PRICE, of Philadelphia, reported a successful case of

REMOVAL OF THE RIGHT KIDNEY FOR PISTOL-SHOT WOUND,

in a girl of 14 years. The ball also passed through the right lobe of the liver, and the convalescence was complicated by numerous abscesses in the track of the wound.

DR. JOHN B. DEEVER, of Philadelphia, read a paper on

NEPHRECTOMY FOR MORBID GROWTHS.

After referring to the forms of morbid growths which involve the kidney, and to the history of the operation, he described a case in which nephrectomy was performed for a tumor of the kidney which proved to be a carcinoma of the medullary type. The kidney was 8 inches in length and 5 inches transversely. The patient died twenty-four hours after operation from shock. The following conclusions were presented:

1. Sarcoma in children should not be subjected to operation.
2. Sarcoma in adults should be operated on.
3. Carcinoma in adults, unless seen early by the surgeon, contraindicates operation.
4. Malignant growths, in the majority of cases, should be removed by abdominal section.
5. Benign growths of the kidney are cases for lumbar operation. If too large to be removed entire, they should be removed by sections, the pedicle being first ligated.

DR. J. H. MUSSEY, of Philadelphia, read a memorandum of the *Life and Character of Benjamin Rush*.

DR. WM. F. WAUGH, of Philadelphia, then read a paper on

THE SPECIFIC TREATMENT OF TYPHOID FEVER.

The speaker had used, since 1881, in the treatment of typhoid fever, the benzoate of ammonium and of sodium as first recommended by Klebs. He had continued these remedies until nine months ago, and he thought that they had been of benefit. During 1887 he had used the sulpho carbolate of zinc in the treatment of summer complaint in children. The different forms of disease classed under this head are almost certainly due to a specific microbe. Two grain doses were readily given to children in their second year. The use of this remedy was followed by marked success. This experience led him to employ the sulpho carbolate of zinc in the treatment of typhoid fever. Twelve cases only had been treated. Three cases were diagnosed by two or more physicians as incipient typhoid. In these the symptoms promptly disappeared under treatment, so that there is doubt as to the diagnosis. The diagnosis in the remaining nine cases was undoubted. One of the cases, admitted in the third week after repeated hemorrhage, died. The others recovered. The ad-

ministration of the drug was followed by relief of gastric disturbance, disappearance of fetor from the stools, amelioration or disappearance of diarrhoea, cessation of hemorrhage, lessening of tympany and reduction of temperature two or three degrees.

DR. T. D. DUNN, of West Chester, read a paper on

THE HYPODERMIC USE OF HYDROCHLORATE OF COCAINE IN MIGRAINE AND SPASMODIC ASTHMA.

The speaker had used this drug in his own person and in the case of others in the treatment of sick headache with satisfactory results. He had used it in doses of one-half to three-fourths of a grain. In spasmodic asthma, combined with one-twelfth to one-eighth grain of morphia the results had been immediate and satisfactory, and unattended with the nausea usually produced by morphia.

In the discussion which followed attention was called to the dangers attending the hypodermic use of cocaine.

DR. E. A. WOOD, of Pittsburgh, read a paper on ARTIFICIAL DIGESTION AND ARTIFICIAL PEPSIN, protesting against the routine employment of artificial pepsin in all cases of dyspepsia without reference to the cause of the indigestion or to the seat of the process. Pepsin was useful in only certain definite forms of dyspepsia.

(To be concluded.)

DOMESTIC CORRESPONDENCE

THE RELATIONS OF THE JOURNAL TO ILLINOIS AND CHICAGO.

A Letter to the Editor of the Philadelphia Medical and Surgical Reporter.

Dear Sir:—In a recent issue of the *Medical and Surgical Reporter* you say:

"I hear a great deal of complaint that THE JOURNAL is not what it was intended to be, namely: a substitute for the volume of Transactions. Men complain that the proceedings of the Association are not properly reported in THE JOURNAL, and that the papers are not published in regular order or according to any well arranged plan. They say here! that it is too much filled with the proceedings of the Chicago and Illinois societies, and that papers read at the meeting are pushed aside to make room for papers which have not been presented to the Association at all, and which were written long after the ones which they have displaced."

As a member of the American Medical Association you have an unquestionable right to criticize THE JOURNAL. Courtesy to THE JOURNAL and to the members of the Association demand, however, that such criticisms should be made first directly to the members of the Association through the pages of THE JOURNAL, and not in another paper unless your communication is refused space by the Editor of THE JOURNAL. Something more than courtesy demands that your criticisms, wherever they may be published, be founded on fact, and that, even if they

be unfriendly, they be just and not misleading. While acknowledging your right to criticize, I claim the same right to investigate the grounds of your criticism, and in the proper place—the pages of *THE JOURNAL*.

I was in Cincinnati at the meeting of the Association, but heard no such complaints as those you mention. Possibly my facilities for hearing are inferior to those of some others, but I heard the opinions of a large number of members in regard to *THE JOURNAL*. I certainly did not hear any complaint "that *THE JOURNAL* is not what it was intended to be, namely, a substitute for the volume of transactions." As I understand it, *THE JOURNAL* was intended to more than substitute the volume of *Transactions*. Nor did I hear any complaint that *THE JOURNAL* is too much filled with the proceedings of Chicago and Illinois societies.

Now let us see by an examination of the departments of Volume IX, July–December, 1887, of *THE JOURNAL*, whether your criticisms are fair and just. I take several departments so as to show that your criticisms not only do not apply to the proceedings of Chicago and Illinois societies, but do not apply to any one of four departments of *THE JOURNAL*.

ORIGINAL ARTICLES—VOLUNTARY.

	No.	Percent. to total.	No. pages	Percent. to total.
Illinois.....	13	23.21	39.45	28.45
D. C.....	9	16.07	18.2	13.16
Indiana.....	7	12.5	9.75	7.01
Germany.....	6	10.71	21.79	15.67
Pennsylvania	4	7.14	11.6	8.34
Virginia.....	3	5.35	7.55	5.43
Michigan.....	3	5.35	5.65	4.06
Louisiana.....	2	3.57	2.8	2.01
9 States.....	1 each	1.78	2.51 (average)	1.8 (average)

From this it is seen that Illinois furnished only *four* more voluntary original articles than the District of Columbia.

In taking account of the Association papers published in Vol. IX it must be remembered that these papers were read at the meeting in Chicago, and it would be only natural that Chicago and Illinois would furnish a larger proportion of these papers, than they would at more distant meetings.

ASSOCIATION PAPERS.

	Papers.	Pages.
Illinois.....	17	41.65
New York.....	10	48.75
Pennsylvania.....	9	16.45
Michigan.....	6	23.7
Missouri.....	4	14.25
Indiana.....	4	11
Kentucky.....	3	10.75
Massachusetts.....	3	8.7
Minnesota.....	3	8.2
Tennessee.....	3	8.45
Maryland.....	2	16.5
Kansas.....	2	3
Iowa.....	2	4
8 other States.....	1 each	25
District of Columbia.....	1	4.75

From this table it is seen that while Illinois fur-

nished more papers than any other State, it furnished fewer pages than New York; and while the Illinois papers averaged 2.45 pages each article, the averages for New York, New Jersey, Rhode Island, Maryland and Massachusetts were above this.

Now let us compare local society reports correspondence, and miscellaneous items in Vol. IX.

LOCAL SOCIETY PROCEEDINGS.

Pennsylvania.....	31.52	per cent. of total.
Illinois.....	26	" "
District of Columbia.....	19.81	" "
Missouri.....	13.05	" "
Massachusetts.....	10.21	" "
Atlantic States.....	59.54	" "
Western.....	39.05	" "

CORRESPONDENCE.

Foreign.....	57.5	per cent.
New York.....	20	" "
Illinois.....	0.25	" "
Indiana.....	5	" "
District of Columbia.....	2.5	" "
Iowa.....	2.5	" "
Pennsylvania.....	2.5	" "

NEWS AND MISCELLANY.

General.....	32	per cent.
Foreign.....	13	" "
Illinois.....	10.0	" "
Massachusetts.....	10.0	" "
Michigan.....	8.7	" "
New York.....	8.7	" "
Pennsylvania.....	5.1	" "
Ohio.....	2.1	" "
Other States less than 2 per cent. each		" "
Eastern States.....	24.7	" "
Western.....	23.1	" "

In Vol. IX were published a total of 256 items of original articles, society reports, and correspondence, as follows:

Domestic.....	214
Foreign.....	42

The distribution by large cities (American) was as follows:

Eastern.

1. New York.....	23 = 8.65 per cent.
2. Philadelphia.....	23 = 8.65 "
3. Washington.....	21 = 8.2 "
4. Boston.....	9 = 3.51 "
5. Pittsburgh.....	4 = 1.56 "
6. Baltimore.....	2 = 0.78 "
	82 = 32.01 "

An average of 13.66 each.

Western.

1. Chicago.....	47 = 18.35 per cent.
2. St. Louis.....	8 = 3.12 "
3. Indianapolis.....	5 = 1.95 "
	60 = 23.42

Average 20 each.

TOTAL ITEMS—BY STATES.

Eastern³

1. Pennsylvania.....	30 = 11.71 per cent.
2. New York.....	28 = 10.93 "
3. Massachusetts.....	9 = 3.51 "
4. Virginia.....	5 = 1.95 "
	72 = 28.12

(³ Excluding D. C., and 4 States giving less than 1 per cent.

(¹ Colorado, Kansas, Kentucky, Massachusetts, Missouri, New Jersey, New York, Texas, Wisconsin.)

(² California, Georgia, Arkansas, New Jersey, Louisiana, Ohio, Rhode Island, Wisconsin.)

*Western**

1. Illinois.....	57 = 22.26 per cent.
2. Indiana.....	11 = 4.21 "
3. Michigan.....	11 = 4.21 "
4. Missouri.....	9 = 3.51 "
5. Iowa.....	7 = 2.73 "
6. Wisconsin.....	6 = 2.34 "

101 = 39.45

If to the four Eastern States we add the District of Columbia, as should be done, the total is 93, and the Eastern percentage increased to 36.32. But the table shows that 4 Eastern States have an average percentage of 7.03, as compared with the Western average of 6.57.

On summing up, then, we get the following page percentages:

Eastern States.

Original articles—voluntary.....	33	per cent.
" " —Association (17 States).....	42.64	"
Society proceedings (local).....	59.54	"
Correspondence.....	25	"
News and Miscellany.....	27.5	"

Average, 37.53 "

Western States.

Original articles—voluntary.....	40	per cent.
" " —Association.....	44.22	"
Society proceedings (local).....	39	"
Correspondence.....	14.11	"
News and Miscellany.....	23.08	"

Average, 32.22 "

Europe, 35 items, 13.67 per cent. of total.

Therefore, when we see the District of Columbia contributing almost as many voluntary original papers as Illinois, New York sending almost as many Association papers to the Chicago meeting, and giving 14 per cent. more correspondence than Illinois, Pennsylvania furnishing 6 per cent. more society reports, and Massachusetts as much news and miscellany, it appears—and is a fact—that your criticism was both unfair and unjust. Such is likely to be the case when one neglects to investigate the foundation for his notions before he publishes them.

In Vol. X, up to the No. for June 2, 1888, I find 72 voluntary original articles (not Association articles). These arrange themselves as follows:

	No.	Pages.
Pennsylvania.....	17	55.7
Illinois.....	15	41.45
District of Columbia.....	12	34.7
Massachusetts.....	8	23.7
Missouri.....	6	11.5
Ohio.....	4	14.2
Iowa.....	3	6.9
New York.....	1	2.5
Indian Territory.....	1	2.9
Rhode Island.....	1	3.5
Syria.....	1	.5
Virginia.....	1	2
West Virginia.....	1	1.45
Wisconsin.....	1	1.9

	No.	Pages.
Or, East of Alleghenies.....	40	122.1
West of ".....	30	78.55

In Vol. X, up to June 2, are reports of 17 medical societies, covering 142 pages, as follows:

	Societies.	Pages.
Pennsylvania.....	5	46.4
Illinois.....	3	40.95
District of Columbia.....	1	21.5
Massachusetts.....	2	13.5
Missouri.....	1	13.9
Ohio.....	1	4.1
Maryland.....	3	9.45
California.....	1	12.3

	No.	Pages.
Or, East of Alleghenies.....	11	90.85
West of ".....	6	51.25

142.1 pages gives an average of 8.35 pages for 17 societies.

The averages are as follows:

5 Pennsylvania societies.....	9.28 each.
3 Illinois.....	13.65 "
3 Maryland.....	3.15 "
2 Massachusetts.....	6.75 "
1 Ohio Society.....	4.1 "
1 California.....	12.3 "
1 Missouri.....	13.9 "
1 District of Columbia Society.....	21.5 "

Thus it will be seen that the pages of THE JOURNAL are not so full of Chicago and Illinois as of Pennsylvania and Philadelphia society reports; and that the Chicago and Illinois societies stand third on the page-average list.

After all, is it not most natural that Chicago and Illinois should furnish a larger proportion of material to THE JOURNAL than any other city and State? Every journal, whether private property or owned by an Association, must depend upon its own city and State for a large proportion of its material. Is it to be supposed that THE JOURNAL would draw as much material from Boston or New York as from Chicago? There are great weekly papers published in those cities, much older than THE JOURNAL. Can THE JOURNAL hope to compete with your *Reporter* for Philadelphia and Pennsylvania material? If Illinois and Chicago writers send as good material as those of other States, should they be told that they must move into some other State so as to equalize matters?

You complain, practically, that the papers read before the Association are not published in a lump, and to the exclusion of voluntary papers. Suppose this was done; would not voluntary contributors cease sending material to THE JOURNAL, so that in a short time THE JOURNAL would exist for a few months in the year, and then become torpid until the next meeting of the Association? One of the impossibilities of this life is eating one's cake and having it.

You will probably admit that voluntary papers may be, and in many cases are, as valuable from a scientific standpoint as the papers contributed through the Sections of the Association. From a business point of view, then, would it be wise to reject good voluntary papers, which would go to other journals, and displease the authors to the extent that they would first cease contributing to THE JOURNAL, and then cease subscribing to it? Furthermore, THE JOURNAL would thus get the name of a "close corporation paper," run solely in the interest of the men that read papers at the meetings of the Association each year. Had THE JOURNAL been

* Excluding States that furnished less than 1 per cent.

begun on this principle it would have died in its early infancy. To begin on this principle now would kill it. I have no doubt that many who pretend to be friends of *THE JOURNAL* would rejoice to have it pursue this policy, and would attend its funeral with pleasure. But on the present policy a funeral is a contingency that need not be considered, as shown by the success of *THE JOURNAL*. If it had not found favor with the profession, and such as no other American journal has ever had, it would not have been necessary to enlarge it by 4 pages an issue last July, nor would it be necessary to add 4 more pages an issue after June, 1888.

Finally, do you not think that in case you make any future criticisms of *THE JOURNAL* it would be best: 1. To be sure of your ground, and not make statements at random. 2. To publish your criticisms in the proper place—*THE JOURNAL*—so that you may not unjustly prejudice those that do not read *THE JOURNAL* against it, and so that members of the Association may see your criticisms without stumbling upon them accidentally?

I remain, Very truly yours,

WM. G. EGGLESTON.

Chicago, June 11, 1888.

STATE MEDICINE.

NATIONAL MARINE PATROL.

The Secretary of the Treasury has issued the following circular, under the date of June 4, 1888:

In order to assist local authorities in the maintenance of quarantine against the introduction of infectious diseases, as provided in section 4792, Revised Statutes, the act of April 29, 1878, and appropriation acts authorizing the President to maintain quarantine at points of danger, the President has determined to establish, by means of the vessels of the Revenue Marine, a national patrol of the coast of the United States, so far as it may be practicable under existing law and consistent with the performance of the other duties confided to that Service.

You are accordingly directed to cruise, actively, with the revenue steamer—, under your command, upon the outer lines of your cruising grounds, and to exercise special vigilance in speaking all vessels arriving from foreign ports, or from infected ports of the United States, directing your inquiries, first, as to the port from which the vessel sailed, and, secondly, as to health of those on board at the time of departure, during passage, and at the time of hailing; and should the information gained indicate a condition of contagion or infection in the vessel or crew, or that the vessel has left a port at which contagious or infectious diseases were prevailing, her master will be directed to proceed for examination to the outer quarantine station provided for her port of destination.

The following regulations will be observed relative to the inspection of vessels.

If a vessel be found with sickness on board, or in

a foul condition, she will be directed to proceed to the quarantine station hereinbefore indicated, and the Revenue-Marine officer will immediately notify the proper quarantine officer. In such case no person will be permitted to board the vessel until the medical officers in charge of the quarantine shall have given the usual permit.

Should the pilot or master of a vessel, when hailed, report cases of recent or present sickness on board, the revenue officer will not board, but will send her immediately to quarantine,

Quarantine officers will be recognized as follows, viz:

Medical officers or acting assistant surgeons of the Marine Hospital Service in charge of Gulf, South Atlantic, Cape Charles, or Delaware Breakwater Quarantines, or any officer of said Service on duty at any port on the interior rivers, the Great Lakes or Pacific coast, and all quarantine officers acting under proper State or local authority.

Special regulations to aid local quarantine authorities will be promulgated hereafter should occasion require.

Dr. Jerome Cochran, of the State Board of Health of Alabama, in a recent report has stated that the late epidemic of yellow fever in Florida was not introduced into the State by the usual trade channels, but by smugglers. This confirms unofficial statements received at this Bureau some weeks since. Dr. Cochran states that the last case was discharged May 11, and the last death occurred May 8, and that there have been active precautions taken to prevent the reappearance of the disease.

JOHN B. HAMILTON,

Supervising Surgeon-General Mar. Hosp. Service.

BOOK REVIEWS.

DISEASES OF MAN: Data of their Nomenclature, Classification and Genesis. By JOHN W. S. GOULEY, M.D., Surgeon to Bellevue Hospital. 8vo, pp. 412. New York: J. H. Vail & Co. 1888. Chicago: W. T. Keener.

The objects of this book, as explained in the preface, are: *first*, to urge the official adoption of a suitable basis for the nomenclature and classification of the diseases of man; *second*, to place before the medical profession certain propositions directed to an improved classification of diseases; and, *third*, to awaken the attention of teachers to the necessity of ameliorating the nomenclature of medicine, pointing out some of the many misused and improperly formed words that are now current, and proposing new terms for their consideration.

In the opinion of the author a nomenclature and classification to be useful and staple should not only rest upon a proper foundation, but should be duly authorized by the whole profession of medicine; and he submits certain questions for discussion in and settlement by the International Medical Congress.

The work is divided into five sections. The first

section comprises: some anatomical considerations of the human body; a statement of the objects and scope of medicine; a classification of medicine; the mutual relations of medicine and surgery; an arrangement of medicine into departments in accordance with the apparatuses of the human body; the definition and genesis of disease; a synopsis of the morbid states and morbid processes of the body, designed as a suggestion of a groundwork for the classification of diseases; and an analysis of some of the anatomical terms used in classification. The *second* section relates to the history, development, scope and significance of human nosography, and contains synopses of a considerable number of systematic arrangements of diseases, illustrative of the principles of nomenclature and classification, and also rules for the guidance of nosographers by Cullen, Parr, Young, and Linnaeus.

The *third* section consists of a nosographical bibliography, chronologically arranged from the time of Felix Platerus.

The *fourth* section is devoted to the elucidation of what is conceived to be a proper basis, character, and method of the nomenclature and classification of the diseases of man; and to the definitions of the terms of classification.

The *fifth* and last section is intended as further explanations of the morbid states and morbid processes, and as an analysis of some of the terms used in general pathology, besides which it embodies a summary of the present state of knowledge of the bacteria, ptomaines, leucomaines, and "extractives," and indicates the relations borne to medicine and surgery by these microorganisms and toxic alkaloids of putridity, and, finally, remarks on the neoplasms and on their classification.

Such is the scope of this work; a work that is a monument of patient, painstaking labor, and for which we fear the author will not be rewarded by an early recognition on the part of the profession, unless some effort be made to simplify matters at the Tenth International Medical Congress.

MISCELLANEOUS.

THE AMERICAN ASSOCIATION FOR THE CURE OF INEBRIATES held its semi-annual session in Brooklyn recently. Several papers were presented. One, by Dr. T. L. Wright, of Bellefontaine, Ohio, on "Points Touching the Medical Jurisprudence of Alcoholic Inebriety," referred in large detail to the physical, mental and moral disabilities caused by alcoholic indulgence, and asserted that these were only the advance guard of pernicious results.

Dr. C. C. Fite, of Knoxville, Tenn., offered a paper on "The Prohibition Question from a Medico-Legal Standpoint," in which he predicted that long before prohibition becomes general, the vital issue—the prevention and cure of drunkenness—will be reached by society regarding habitual indulgence in alcohol as a disease and, denying the right of any individual to further a tendency, hereditary or acquired, toward the inevitable physical and mental damage which excess in drinking involves, insisting that he shall be protected—and with him those who, otherwise, might inherit the baneful effects of his excess—by treating and caring for him as are the insane, or the victims of other disease. The paper was a logical, forceful plea for the

need of to-day—proper asylums where the alcoholic inebriate can have that rational, scientific treatment his case demands. Dr. J. B. Mattison, of Brooklyn, read two papers, "The Ethics of Opium Habitués," and "Antifebrin, vice Opium, as an Anodyne." In the former he asserted that several years' exclusive professional experience among a large and enlarging number of opium habitués convinced him that the popular idea that all men who use opium are liars, is a mistaken one. He argued that the prevalent opinion—uncharitable and untrue—of an opium habitué being merely the victim of a vicious indulgence—was a leading factor in his desire to shield himself from censure, and claimed that a more rational and right appreciation of the situation—regarding such patients, with certain exceptions, as creatures of conditions beyond control—would be most helpful against the protective temptation to untruth. Besides, a more liberal and correct opinion on this score would have an important bearing on their medico-legal status and treatment. In his second paper, Dr. Mattison referred to the recent triumphs of analytical chemistry in giving the profession such valuable hypnotics as amylen hydrate and sulphonal, and, noting the far reaching value of any drug that will take the place of opium—which, while so great a blessing is so often a bane—expressed his belief that the new anodyne, antifebrin, was the richest addition of modern times to the therapeutics of pain.

PORTRAITS OF DR. C. R. AGNEW.—At the last meeting of the Ophthalmological and Otological Section of the New York Academy of Medicine, the following motion was made and carried:

"That a committee be appointed, of which the chairman of the Section, Dr. David Webster, be a member, whose duty it shall be to obtain a good photograph of the late Dr. Cornelius R. Agnew, for the purpose of having engravings suitable for framing made from this. The right of issue and sale of such engravings shall be given to some first-class publisher, if practicable; if not, the committee shall offer them to the profession at cost."

In accordance with the above, a committee has been appointed. Members of the profession who desire such an engraving, accompanied by an autograph signature, should send their names and addresses to the Secretary of the committee, Dr. Charles H. May, 640 Madison Ave., New York City, at once. When all such names shall have been recorded, those who have requested a copy of the engraving will be notified of the cost of the same, either by the publisher or by the committee having the matter in charge.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 9, 1888, TO JUNE 15, 1888.

Capt. Henry P. Birmingham, Asst. Surgeon, granted leave of absence for one month. S. O. 117, Div. Atlantic, June 11, 1888.

Capt. A. V. Cherbonnier, Medical Storekeeper, granted leave of absence for four months, on surgeon's certificate of disability. S. O. 133, A. G. O., June 9, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 16, 1888.

Surgeon Daniel McMurtrie, detached from Naval Hospital, Yokohama, Japan, and return home.

Surgeon C. U. Gravatt, detached from U. S. S. "Michigan" and to hospital, Yokohama.

P. A. Surgeon John M. Edgar, ordered to the U. S. S. "Michigan."

Surgeon B. S. Mackie, ordered to the U. S. S. "Ossipee."

Surgeon J. B. Parker, detached from U. S. S. "Ossipee" and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JUNE 16, 1888.

Surgeon Walter Wyman, detailed as member Board of Examiners, vice Surgeon Fessenden, excused on account of physical disability. June 15, 1888.

Surgeon C. S. D. Fessenden, granted leave of absence for thirty days on account of sickness. June 15, 1888.

THE

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CHICAGO, JUNE 30, 1888.

No. 26.

ADDRESS IN SURGERY.

SOME RETROSPECTIVE AND PROSPECTIVE THOUGHTS ON SURGERY.

Delivered at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY DONALD MACLEAN, M.D.,

OF DETROIT.

CHAIRMAN OF THE SECTION ON ANATOMY AND SURGERY.

Our generation has witnessed one of the most active and progressive eras in the history of that department of medical science to which the attention of this Section is especially devoted. It has occurred to me that a concise and candid statement of some of the impressions made upon my own mind and some of the conclusions at which I have arrived as the result of active experience, extending over a period of at least a quarter of a century, might not be altogether uninteresting to this Section, which has conferred on me the great honor of electing me its chairman; an honor which carries with it the responsible duty of delivering an address on the present occasion.

The vastness of the subject and the shortness of the time at my disposal necessitate a brevity and conciseness of style which might easily be construed as implying a spirit of dogmatism, which is now, once for all, emphatically disavowed. It is possible to hold well-defined opinions and still be tolerant of those who differ from us; and no one could approve or admire the spirit of scientific skepticism more than I do. So that it goes without saying that I freely and fully concede to every one the right to judge for himself how much or how little of what is here said he shall accept as true. Any one who will reflect for a moment how often he has had occasion to modify his opinions on important surgical matters will surely hesitate a good while before venturing to be censorious toward those who fail to accept his views or his methods of practice. Not only so, but as we look around us and observe the almost diametrically opposite views which authorities of equal eminence hold on the same subject, we cannot but feel that it is absurd and presumptuous for any one to attempt to dictate to his brethren in the profession what they shall accept as final truth in surgery.

One thing is certain, that the progress of surgery during the last quarter of a century has been unprecedented. To correctly analyze the methods and

the results of this wonderful period of activity, winnowing out whatever has proved to be false, misleading or unreliable, and giving proper significance and credit to the genuine and the permanent, is a profitable employment and a true labor of love for the scientific student and practitioner of surgery.

Without claiming for myself any special fitness for this work, the mere fact of my election to this honorable office encourages me in the hope which I have expressed, that a frank statement of some of the opinions which my observation and experience have led me to form may be listened to with interest by my present audience. Perhaps, too, the fact that I have been actively employed during almost the entire period of my professional life in the work of teaching surgery to large classes of medical students may add somewhat to the interest of such a summary of my views on a few of the great surgical problems of our day as I here propose to make.

The marvelous progress of modern surgery in our time is commonly attributed to two great agents, namely, anesthetics and antiseptics. But with all due deference to these, it should not be forgotten that they themselves are only part of the fruits of a great general movement all along the line of the natural sciences, and that advances in anatomy, chemistry, physiology, histology, etc., have contributed in innumerable ways to the progress of surgery; and it is no more than just that the great army of able and enthusiastic laborers in these collateral departments should receive adequate recognition for the services which they have rendered, directly or indirectly, to surgery. Nor should the fact be overlooked that even before the beginning of the present surgical era, that is, before the introduction of anesthetics, and long before antiseptics were dreamed of, surgery was a great scientific art, and many of the principles and the methods promulgated and taught by our fathers stand unchallenged and unchanged to this day. To those great minds who cultivated and practiced surgery without the aid of our "modern conveniences," it is impossible to concede too high a meed of praise. The least we can do is to acknowledge with grateful candor the extent of our indebtedness to them.

That the introduction of anesthetics constitutes one of the most important events in the history of surgery is a fact generally conceded; and still it seems to me that, in trying to explain the rapid progress of our art in recent times, a mistake is often made in attributing to other causes a good deal that is really due to this. For example, it is a common thing now-

a-days to hear much, if not all the credit of the wonderful advances in the surgery of the abdomen, the surgery of the articulations, the surgery of the blood-vessels, etc., given to Listerism, or antiseptic devices. Now, the fact is that *antiseptics without anesthetics could have had but a comparatively limited and insignificant field of usefulness*; and before attempting to decide or define the true value of antiseptic processes, let us try to do justice to some of the other factors in this interesting problem.

The introduction of anesthetics at once enlarged the field of operative surgery, in the first place by enabling patients to undergo operative procedures which otherwise could not be endured; in the next place, by enabling many persons to cultivate and acquire operative skill and experience who, without the aid of anesthetics, would have shrunk from the dread ordeal of performing a surgical operation. The introduction of anesthetics inaugurated an era of unprecedented enthusiasm in the cultivation of every department of surgery. And out of this, as a necessary and natural consequence, has come the splitting up of surgery into subdivisions which are now dignified by the name of *specialties*; as, for instance, ophthalmology, otology, gynecology, etc., all of which must still be included under the head of *surgery*. The oculist or the gynecologist who is not a surgeon, in the largest and best sense of the term, is in great danger of becoming a charlatan.

To the introduction of anesthetics, more than to any other agency, is due the credit of this wonderful extension of the boundaries of modern surgery. It should not be forgotten that this great movement had not only started, but had made considerable progress, before the theories of Pasteur and their practical application to surgery by Joseph Lister were thought of. Perhaps the best illustration of this assertion is derived from the history of abdominal surgery. Spencer Wells, Clay, Atlee, Peaslee, Dunlap and Keith, as well as others, had achieved world-wide fame as ovariologists long prior to the advent of antiseptic surgery. In his address on surgery to the British Medical Association in 1865, Prof. James Syme spoke as follows in reference to the operation of ovariectomy:

"The objections originally entertained with regard to both prognosis and diagnosis have been in a great measure removed through the careful discrimination of cases, while the operative procedure has acquired a corresponding degree of perfection, and the results are so satisfactory that the proportion of deaths does not exceed from 30 to 35 per cent. The most successful operator in Scotland is my friend and former house surgeon, Dr. Thomas Keith, who has operated in thirty-five cases and lost only nine of his patients."

In the United States and other countries to-day there are many ovariologists who are honestly of the belief that by the use of strict antiseptics they possess an immense advantage over those ovariologists of preantiseptic times. They certainly have the unspeakable advantage of the vast accumulations of the recorded experience of operators who, like those whom I have named, have been so careful and thorough in the publication of their cases, their obser-

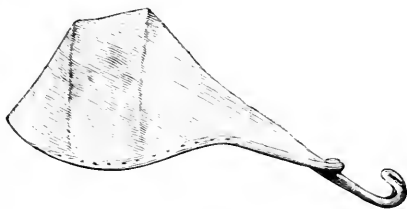
vations and their methods; and still, I ask, can it be truly said that the mortality of ovariectomy has, on the whole, materially lessened since Professor Syme uttered the words which I have just quoted? When full and fair credit is given to the other aids which have come to the profession as a whole, through increase of knowledge and enlargement of experience during the period of wonderful surgical activity from 1865 to 1888, how much room is left for credit on behalf of antiseptics? In our reflections and calculations on this point it is only just to note the remarkable fact that among the most eminently successful of the abdominal surgeons of to-day we find men like Tait, Bantock and others who claim that, so far as their experience in abdominal surgery goes, antiseptics have been weighed in the balances and found wanting, and by whom they have been denounced as a delusion and a snare. It has been customary of late years, when a successful operation of a new or exceptional nature, such as resection of intestine, cholecystotomy, splenectomy, etc., is recorded, to claim the result as another argument or fact in support of antiseptic surgery. And it may be that the belief in the marvelous advantages of such safeguards as it is supposed to furnish has inspired confidence beyond that which our increased knowledge of pathology, our improved dexterity in manipulation and our faith in the generally recognized and approved principles of surgery independently of antiseptics can afford us. But is it not just possible that too much value has been attached to the influence of antiseptics and too little to the numerous other factors which enter into this complex and many-sided problem? Is it not just possible that even if Listerism had never been heard of, surgeons would by this time or, at all events, sooner or later, have come to appreciate the immense value of perfect surgical cleanliness and conceded to it its true position in relation to all the other essential requisites of successful operating, such as tenderness of manipulation, efficient drainage, healthy surroundings, judicious dieting, conservation of blood, prevention of shock, wise and skilful nursing, etc.? All honor to Lister as the great apostle of surgical cleanliness, no matter what the ultimate fate of his theoretical views may be. The germ theory of disease as applied to surgery may be materially modified, or even proved to be in certain important respects erroneous; the use of carbolic acid, bichloride of mercury and the other germicides may ultimately come to be regarded as worse than useless, and all the complicated paraphernalia which constitutes antiseptic surgery declared unnecessary and absurd; and still the fact must remain that, whether right or wrong as a matter of abstract scientific truth, the theories and the methods of Lister have done much to encourage the progressive modern surgeon in his righteous ambition to carry his beneficent labors to the furthest limit of possible usefulness. The simplest and most obvious truths are often the most difficult of apprehension and application by those most interested in their effects. It will be a most striking and wonderful exemplification of this old and true saying if it should ultimately appear that the sum and substance of the life

work of this great surgical prophet and his disciples is comprehended in the ancient scriptural admonition, "*Wash you, make you clean.*" Whatever the ultimate fate of the germ theory in surgery may be; whatever the fate of the so-called germicides like carbolic acid, bichloride of mercury, etc., may be, one thing is certain: that anything like a return to the old, loose and careless methods, as regards cleanliness, of conducting surgical operations and of dressing surgical patients is absolutely impossible; and for this the world will always feel grateful to Joseph Lister.

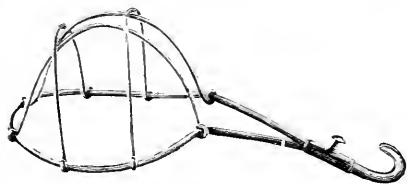
ANÆSTHETICS.

There are few subjects of surgical interest that have been so freely written about and discussed in our day as anæsthetics. Even the briefest review of this vast field of surgical literature would lead me far beyond the scope of this address. I merely refer to it for the purpose of declaring that, after very careful and respectful consideration of the views of those who have written and spoken on the subject, and after impartially testing the different substances recommended, I find myself irresistibly forced to the conclusion that, upon the whole, for all general purposes, chloroform possesses superior advantages. My own experience with it induces me to believe that, when carefully administered in suitable cases, it is little if at all more dangerous than other anæsthetics, and its advantages in other respects are too well known to require further illustration on the present occasion. Death under anæsthetics is in every case a great and shocking catastrophe; but when it occurs during some comparatively trivial procedure the circumstance is appalling. Fortunately, in the progress of surgery of late years, local anæsthesia by ether spray, cocaine, etc., has been found to constitute an efficient and altogether safe substitute in a large field of minor though painful operations. That in the near future other and better general anæsthetics than any yet known may be discovered, is surely not an

medical science. As a justification for my own faith in the safety and general efficacy of chloroform, perhaps I may be allowed to state that it is very nearly thirty years since I commenced using it, and so far no accident that could in any way be attributed to its use has occurred to disturb the early impressions as to its trustworthiness made upon my mind by the eloquent teachings of James Young Simpson and the no less powerful utterances and example of James Syme. To the use of the simple little apparatus which I here present I have come of late years to attach great value in the administration of chloroform.



No. 1.—Chloroform Inhaler.



No. 2.—Frame of Inhaler, uncovered.

THE MICROSCOPE IN SURGERY.

Who of us is unable to recall the time when great things were hoped for by surgeons from this truly wonderful instrument, which has done so much in other departments of science? Who does not recall the confident predictions indulged in as to what would be accomplished by its means in the diagnosis and classification of tumors, in the diagnosis of the different morbid fluids, and so on? Can it be claimed to-day that these hopes have been realized, these predictions fulfilled? I fear not. How much has it done to enlarge our knowledge of the essential characteristics of different kinds of pus? Can we by its means distinguish with perfect certainty between the pus of gonorrhea and the pus from a chancre or any other source? In short, has the microscope added anything to our powers as practical surgeons so far as this and other common surgical fluids are concerned?

In the diagnosis and classification of tumors great things were expected of it, and it was also expected that by its means the prognosis of morbid growths would become a matter of actual and unmistakable demonstration. That much information interesting to the scientific surgeon has been obtained as the result of vast efforts in the investigation of the ori-



No. 3.—Chloroform Dropper.

unreasonable expectation, when we consider the ceaseless energy of earnest and brilliant students and experimenters in this as in all other departments of

gin and the essential nature of morbid growths no one can deny; but for the practical purpose of deciding whether or not a given tumor should be removed by operation, or for the purpose of determining the prognosis in relation to the question of return or the danger of general infection of the system, I have not been able to persuade myself that the microscope has added much if anything to our resources. We must still depend upon the ordinary clinical signs and symptoms, the anatomical relations, and the facts of its history in determining our views as to the true nature and the best treatment of a morbid growth.

In certain departments of practical medicine nearly related to surgery, such as the examination of urine, etc., the microscope is invaluable; but to the ordinary practical surgeon its usefulness has not equalled the expectations of its early enthusiastic advocates.

ELECTRICITY IN SURGERY.

Electricity is another modern addition to the armamentarium of the practical surgeon; and although it has in some directions proved disappointing, still it can, I think, with truth be claimed that when used for suitable purposes, it has demonstrated its right to the respect and gratitude of the profession. Much harm has been done and much unfair prejudice excited against this useful agent by the absurd and extravagant claims which have from time to time been made in its behalf as the result of inaccurate observations or unscientific deductions, and there is reason to fear that this kind of obstruction to the proper recognition of electricity as a surgical agent has not yet entirely ceased. That certain forms and degrees of urethral and other strictures are capable of being remedied by electrolysis skillfully and carefully applied I am prepared to believe; but when we are told that all other methods of treatment of this large and important class of surgical cases are to be completely superseded, or nearly so, by this one, my belief is that our duty as rational practitioners is to suspend judgment.

Cases of far-advanced, long-neglected stricture, with fistulae in perineo and large deposits of dense, inflammatory tissue, will, in my opinion, still furnish a useful field for the operation of external perineal urethrotomy, an operation which I have performed with the most satisfactory results in a large number of cases which I do not believe would have yielded to any other method of treatment. Some years ago I performed the old operation of urethrotomy without a guide in a case of complete occlusion of the urethra, the result of laceration from fracture of the pelvis. The patient had passed all his urine through a perineal fistula for five years, not a drop having passed by the natural channel in all that time. The occluded portion of the urethra extended to a length of more than two inches. The operation, in which I was assisted by my colleague, Prof. Frothingham, and my brother, Dr. A. C. Maclean, was a long and difficult one, but was crowned with *absolute success*. And surely it will not be claimed that either electricity or any other method of treatment could have

held out the least shadow of hope in such a case.

The testimony of Apostoli, Keith and others as to the efficacy of this agent in favorably affecting the growth and tendencies of uterine fibroid tumors, if confirmed by further experience, is certain to be regarded as marking a most important era in the history of this department of surgery.

In this connection the following very recent case appears to me sufficiently important and suggestive to give here in detail. Mrs. S. G., æt. 18, residing at Matamora, Ohio, was admitted to the University of Michigan Hospital April 18, 1888. She is of German extraction. Her father died in 1875 of acute consumption. During his early life in Germany he appeared to have been in hospitals for treatment of tumors on arm and shoulder. During latter years he suffered very much from rheumatism occasionally. Seven brothers and sisters died in childhood in Germany; cause of death unknown to the patient. The children born in America are healthy. Mrs. G. commenced to menstruate at 12 and has been regular since; was married in June, 1887. During the fall of 1886 she first felt a lump in the left breast, which was painful. The swelling was about the size of a walnut and was movable. It increased very much during the winter and she suffered from shooting pains, which were more acute at her menstrual periods. On examination by me the tumor was found to occupy nearly the whole of the gland. It was hard, nodulated, the nipple retracted, and, in short, presented every appearance of scirrhus. Moreover a dense mass of considerable size existed in the axilla. Had this patient been a woman over thirty years of age I should undoubtedly have recommended and performed amputation of the breast.

The resemblance between this breast and many which I have amputated for cancerous disease, and which have been proved by ulterior investigation to be malignant, was very striking indeed. The age of the patient was the only consideration which led me to entertain a hope that the prognosis might not after all be so grave, and that the tumor might be amenable to treatment by milder means; and I determined before doing anything else to make a fair trial of electrolysis with it. For that purpose I requested my assistant, Dr. George A. Hendricks, to take charge of the treatment, which he did on April 19. The applications were made with positive electrode over the growths and negative over the sternum, the positive electrode being a circular copper plate one and a half inches in diameter, covered with fine sponge, the negative electrode a copper plate two inches square, covered with sponge. When in use the sponges were wet with a strong solution of salt and before application the parts were well washed with alcohol. On April 19 nine cells, seven milliampères, were applied for ten minutes; on the 20th, 38 cells, 30 milliampères, for twelve minutes, applied over the tumor. Chloroform was given during these applications, as the patient could not tolerate them without anesthesia. On April 21, 12 cells, 10 milliampères, for ten minutes. On the same day the same application was made for the same length of

time over the axillary tumor. The negative pole making the skin of the chest sore, a larger one was made, of an oval shape, five by eight, covered with fine sponge. On April 22, 38 cells, 30 milliamperes were applied for ten minutes over the breast and for the same length of time over the axillary tumor. By this time the breast tumor was found to be reduced to a spherical nodule about the size of a walnut. Contraction of the nipple had to a great extent disappeared. On April 24, beginning with 9, increasing gradually to 24 cells, for twelve minutes on breast and axilla. On April 25, 26 and 27 the same application; on April 28, 30 cells; on April 29, 38 cells. After this the skin over the breast appeared somewhat irritated, but the tumor decidedly smaller. On April 30, 38 cells were applied over the breast and to the axilla. On May 3 the patient was menstruating, and the treatment stopped for the present; but the growth by this time in the breast and in the axilla had almost entirely disappeared and the patient, considering herself cured, was most anxious to return to her home in Ohio, which she was permitted to do.

In chronic enlargement of the prostate in old men I think I see in this direction a gleam of reasonable hope for a class of cases hitherto regarded as almost if not quite beyond remedy.

The value of electrolysis in the treatment of that common and important surgical condition known as nœvus or aneurism by anastomosis is a triumph of surgery which belongs to our own generation. Previous methods of treatment, namely, excision, caustics, ligature, injection of astringents into the structure, are all inferior in every respect to the method by electrolysis. I have used and have seen used every one of these different methods, and have no hesitation in giving the preference to electrolysis on the score of safety, efficiency and ease of application. I here present for inspection a few photographs illustrative of a large number of cases of nœvus, treated successfully by electrolysis at my public clinic.

SURGICAL HÆMORRHAGE.

Our generation has witnessed substantial advances in regard to the management of surgical hæmorrhage. Its prevention during long and extensive operations by means of Esmarch's bandage is one of the most striking and important of these advances. No surgeon would now like to dispense with this simple but truly valuable appliance.

The aortic compressor, invented simultaneously by Pancoast and Lister, by which, with the utmost safety and certainty, the circulation through the lower half of the body may be absolutely controlled during pleasure, is another device in which, from actual experience in many urgent cases, I have come to have perfect confidence. I am fully persuaded that no danger of injury to the abdominal organs is involved in its use.

Catgut, and other animal ligatures, properly prepared, constitute another substantial improvement. The abandonment of all the so-called styptics, as the per-salts of iron, tannin, etc., except in very rare and

peculiar cases, is another step in the right direction. They are dirty, irritating, and above all unreliable as hæmostatic agents. By means of acupressure Simpson and others claimed nearly if not quite as brilliant results in the healing of surgical wounds as the advocates of antiseptic surgery have since claimed for their methods. Now-a-days, however, acupressure, notwithstanding the strong theoretical arguments in its favor may almost be said to be a dead issue.

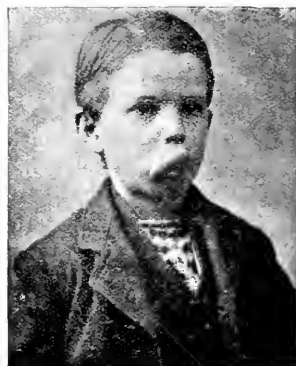
In regard to that interesting affection, aneurism, the revival of the old operation of Antyllus in certain suitable cases, and the restricting of the Hunterian operation to a somewhat more limited field of usefulness, is a most striking and interesting improvement, for which the credit is mainly due to Prof. Syme. The achievements of this truly great surgeon in this department of surgery were sufficient to shed peculiar brilliancy over the closing years of his peculiarly brilliant career. I hope I may be pardoned for suggesting in this connection that when the enthusiastic devotee of "all antiseptic precautions" heralds forth to-day as an additional proof of the value of his method a successful case of ligature of an artery for aneurism, the remarkable fact should be remembered that Prof. Syme, whose career was practically closed before antiseptics were discovered, ligatured the femoral artery for aneurism fifty-eight times without a single failure. If there has been any corresponding record made since the introduction of those methods, I have not heard of it.

The recently promulgated view that an artery may be securely ligatured by a broad animal ligature, without rupture of any of its coats and without the formation and organization of the classical coagulum between the point of ligature and the first branch, if true, is undoubtedly the greatest discovery relative to the surgery of the arteries that has been made in our day. Such a revolutionary doctrine ought to be accepted cautiously and after careful observations on the human subject. I am able to contribute one or two facts in its favor from my own experience. Two years ago I was compelled to ligature the common femoral artery immediately below Poupart's ligament, for urgent hæmorrhage, the result of ulceration of the artery in connection with an obscure abscess which originated in the interior of the pelvis. I used carefully prepared catgut ligature and with perfect success so far as the hæmorrhage was concerned. The patient, an old, worn out man, died some weeks afterward from a complication of diseases, but no trouble came from the ligature of this most dangerous of all the arteries. Unfortunately, no post mortem examination could be obtained in this interesting case.

Some months ago I was compelled to ligature the superficial femoral under circumstances of urgent emergency for secondary hæmorrhage from the popliteal artery, the result of a pistol shot injury inflicted some weeks before the case came into my hands. Extensive burrowing of pus all through the tissues of the thigh had occurred, and the patient was nearly exhausted from septicæmia, from which death ultimately resulted nine days after the operation of ligature of the femoral. On post-mortem examination



No. 1.—Before operation.



No. 2.—Before operation.



No. 3.—After operation.



No. 4.—Before operation.



No. 5.—After operation.

by the microscope the artery was found securely closed; the inner coats had not been divided and there was no trace of a clot.

These are not the only, though they are perhaps the most striking, cases in which I have been able to note the same state of affairs.

I venture to relate here the following recent case of a bloodless operation for traumatic aneurism, which seems to illustrate more than one of the points mentioned in connection with this subject:

F. S., æt. 17 years, son of a farmer, residing at Calkinsville, Isabella county, Michigan, was admitted to the University of Michigan Hospital at Ann Arbor on the morning of October 19, 1887. About two and one-half months previously he was boring a hole with a pocket knife through a strip of pine wood, when the wood, proving softer than he expected, the knife suddenly slipped through the wood and his clothes and penetrated the thigh, making an incision about three-quarters of an inch long obliquely outwards and downwards. The underlying artery was injured and dangerous hæmorrhage ensued, which was controlled by pressure. Upon admission to the hospital a considerable tumor was visible, occupying Scarpa's triangle, and over-lapping the lateral boundaries of that space. The aneurismal bruit could be heard with great distinctness all over the tumor, which, in short, presented all the characteristic symptoms of aneurism. The patient's father stated that the size of the tumor was rapidly increasing, but that the general health of the patient was good. Pulse, 116, temperature 99°. On October 20, in the presence of the medical class, Dr. T. J. Sullivan assisting me, he was placed under the influence of chloroform, the aortic compressor applied, an incision made about two inches in length over the surface of the tumor, the aneurismal sac exposed, and freely opened, and the coagulated contents evacuated. The compressor was then slightly relaxed, and the bleeding point by that means accurately determined. The artery was cautiously freed from its connections, and strong catgut ligatures applied above and below the point of wound and cut off short. In the primary incision two or three small vessels were divided, which were also ligated. No special antiseptic measures were used, other than perfect cleanliness. Suppuration was not altogether prevented. The highest temperature was reached on the second day after the operation, when the thermometer under the tongue reached 103°. After this the temperature fell below 100°, and at no time afterward exceeded that point. The case progressed favorably, and the patient was discharged cured on the 1st day of November, that is to say, just eleven days after the operation, and he has continued well to the present time. The ligatures which were applied to the femoral artery were never heard from in any way.

In contrast with the case just related, I desire to refer briefly to a case of traumatic aneurism of the common femoral artery, reported by myself in the *New York Medical Record*, for Jan. 4, 1882. In that case the wound was produced by a pistol shot, and was situated immediately below Poupart's liga-

ment. The patient was a boy, æt. 14. The accident happened on April 28, and on October 10, of the same year I performed the Hunterian operation, placing a carefully prepared catgut ligature upon the external iliac artery. Had there been a reasonable hope of the wound being in the superficial femoral as in the previous case, I should have performed the old operation; or had the external wound been unhealed or in any danger of opening up again, I should have felt compelled to treat the case as a wounded artery, and applied a ligature on the affected vessel above and below the wound. As it was, the situation of the scar excluded all hope of the superficial femoral being the wounded vessel. In the next place, the external parts were as perfectly healed as if they had never been injured, and the aneurism being comparatively small and well defined, although in reality, a false aneurism caused by an external wound had come to correspond very closely to a true aneurism, at least in so far as the question of treatment was concerned, so that the Hunterian operation seemed the best, and indeed, at that time, the only alternative. October 31, that is twenty-one days from the date of the operation, this patient was dismissed cured. In a similar case to-day, it would be at least justifiable to take into consideration the propriety of substituting the old operation for the Hunterian, as in the case of aneurism affecting the superficial femoral which has been described in a preceding paragraph of this paper.

DISEASES OF THE JOINTS.

The treatment of diseased joints has made solid and satisfactory progress in recent times. Those intractable cases, to the pathology of which Sir Astley Cooper, Sir Benjamin Brodie, and others, devoted so much attention, and which they so unsuccessfully endeavored to cure by different forms of counter-irritation and constitutional treatment, are now successfully managed by physiological rest, pressure, extension, and counter-extension, and especially by the operation of resection or partial resection. My own observation and experience have convinced me that this last method of treatment, that is, resection or partial resection, has a much larger field of usefulness, especially as regards the hip and knee, than has hitherto been generally believed. A mistake is in my judgment, often made in postponing the performance of this operation until the disease has extended far beyond the limits of the articulation, and the case has become hopeless by any means other than amputation. So soon as a case of articular disease refuses to yield to a fair trial by the milder methods, the duty of the surgeon, in my opinion, is to *open the joint and remove all of the diseased tissue*. By this course the danger to the life and the limb of the patient is reduced to a minimum, and the duration of the treatment materially abbreviated.

In certain cases of congenital or acquired deformity of joints, beautiful results are possible by resection, as well as by subcutaneous osteotomy. For example, on March 15 last, a young man, F. McMill., æt. 16 years, came to my public clinic on account of a very peculiar deformity on his left knee joint, which I had the following history:

The patient had malarial fever five years ago, which lasted for four or five months. During convalescence, when attempting to walk, he noticed a weakness in his left knee, which appeared to bend beneath his weight. This weakness increased steadily, and seven months before admission it became much aggravated. No medical advice until six months ago, when a doctor advised him to wear a splint for support, which he has since done. The tendency to luxation, however, continued to increase up to the time of admission when it was found to constitute a very unsightly deformity, and to almost entirely deprive the patient of the use of his limb. In walking there was a plainly apparent subluxation of the head of the tibia outwards, so that the leg formed an angle of about 120 degrees at the knee-joint. On March 22, he was presented at the clinic, placed under the influence of chloroform, and the ordinary operation of resection of the knee-joint performed, a slice being removed from the articular surfaces of the femur and tibia, with the saw. The bones were extremely vascular, but the hemorrhage was speedily arrested by the application of hot water. The osseous surfaces and the edges of the wound were coaptated and secured with four silver wire sutures through the soft textures, down to but not including the bones. The wound was covered with iodoform gauze, and supported with splints composed of folded newspapers well covered with cotton batting maintained by bandages. Nine drachms of chloroform were used.

On April 23, he was presented to the clinic. The wound at that time had not been dressed for four days; but very little suppuration had taken place. The union between the bones was solid so that the limb could be lifted bodily by taking hold of the heel. On April 24, a light plaster cast was applied by Dr. Hendricks, and the patient walked into the clinical amphitheatre on his crutches, and was able to lean considerable weight on the affected limb. He was then dismissed from the hospital, *five weeks from the day of operation*.

In the treatment of the early stages of articular disease affecting the joints named, and especially the elbow and the knee, the plaster of Paris cast is, in my opinion, a useful appliance, but it requires much cautious judgment and careful observation in its management.

In any case of articular disease when the degeneration of tissue has extended, as it sooner or later does unless arrested by efficient treatment, beyond the limits of the articulation, inducing destruction of the medullary canal and other parts of the bones involved, the only efficacious treatment is amputation, and under these circumstances I have in several instances successfully performed amputation even at the hip-joint. One case in point, I had the honor to report to this Section, illustrated by a very striking specimen, at the annual meeting two years ago at St. Louis.

TREATMENT OF FRACTURES.

This is a department of surgery that has always had, for obvious reasons, a peculiar interest for the

practical surgeon; and in our generation, as in previous ones, much activity has been displayed, and much ingenuity exercised in efforts to improve methods and appliances for the management of these common and important surgical cases. It would take a long time, and be a tedious and unprofitable task to describe, discuss or even enumerate the many suggestions and inventions which have engaged the attention of surgeons during the memory of those listening to me. I will only take time to notice a very few of those which appear to me to be the most worthy of consideration here.

The first of these is the improved and simplified methods of securing efficient, continuous extension, and counter-extension in the treatment of fractures, especially of the thigh, the most difficult and hazardous of all fractures so far as the surgeon's reputation is concerned. The method known by the name of its inventor, Gurdon Buck, has attained to such universal acceptance that now it may be said to have no competitor for professional favor.

The abandonment of all complicated and mysterious machinery, and the substitution of the simplest forms of material, such as pasteboard, leather, and so forth, as coaptation splints, is another striking fact in the history of this department of surgery in our day. My own favorite splint for these purposes consists of folded newspapers surrounded by one or more sheets of cotton wadding. This constitutes a simple, cheap, light, safe, efficient and easily applied apparatus. I use it not only in the treatment of fractures of the long bones, but in the treatment of resections of the joints, and have every reason to feel entirely satisfied with it, and many of my former pupils have testified to its merits as a practical appliance.

The use of plaster of Paris as a dressing in fractures, notwithstanding the eloquent claims made for it some years ago, in certain high quarters, has now, I think, reached its proper position in the estimation of the profession. It is a suitable method of treatment for a few fractures, under certain exceptional circumstances, but its field of usefulness is, in my opinion extremely limited.

The treatment of Colles' fracture without any splints at all, and regarding the concomitant sprain of the wrist-joint, and the danger of adhesions and contraction of tendons as the chief indication after the fracture is once reduced, carefully eschewing immobilization (*which is improper in sprains everywhere*), according to the teachings of Bouchet, E. M. Moore, Le Comte, Gordon, Pilcher and others, I have had numerous opportunities of testing, and have had the pleasure of placing on record some of the results of my experience, which have been eminently satisfactory in every case in which I have tried it. Instead of regarding Colles' fracture with fear and trembling, as used to be the common feeling toward it on the part of surgeons, it may now, with our better understanding of its pathology and our improved methods of treatment be regarded as among the safest and most satisfactory of all fractures. And in this connection I may refer briefly to a comparatively new and very important principle of

practice as regards all fractures in the neighborhood of joints, namely, the cautious, efficient measures now adopted by the aid of anesthetics, when necessary, to prevent ankylosis, and contraction of fibrous structures by the use of *passive movements*, cautiously applied to the articulation during the course of treatment of the fracture. The treatment of fractures of the humerus, when non-union seems to threaten, by placing the forearm in the straight instead of the rectangular position, on the principle laid down by the late Dr. Frank Hamilton, I feel bound to approve after some very satisfactory experience therewith. The main argument in favor of the rectangular position namely, the danger of ankylosis in the worst position, no longer holds good, since by the maintenance of judicious passive movements, this contingency is fully provided for.

In regard to the treatment of non-union of fractures, there are only three observations which it seems necessary for me to mention here. The *first* of these relates to the cause of non-union, about which great uncertainty has always existed in the minds of the profession. For some years past it has been my fortune to receive, at my public clinic in the University of Michigan, many cases of ununited fracture, mostly from the lumber camps and mining districts of the northern part of the State, and I have been struck with the fact that, in every instance, the fracture has been produced by direct and very great violence; so that it has seemed to me a reasonable explanation of this unfortunate accident that the violence of the injury, affecting injuriously the vital powers of the tissues involved, is responsible for the disastrous failure of the reparative efforts of nature.

In the *second* place, I have come to believe that it is possible for the surgeon to determine by actual examination whether or not there is any reasonable chance for union to be induced in any given case of this kind. If, on examination, the medullary canal is found enlarged, the cortical substance proportionately thin, the bone and neighboring tissues generally having undergone fatty degeneration, no operation and no method of treatment will, in my opinion, succeed in inducing union.

In the *third* place, experience has led me to discard entirely the expedient of wiring the ends of bone after the operation of resection for non-union. I am convinced that it does not improve the chances for union, and I have in cases of my own and of other surgeons frequently had occasion, months or years afterward, to operate for the removal of silver ligatures which had become a serious source of annoyance and danger to the patient. Within a few months I have performed resection of the femur for non-union in two extremely bad cases, and in an equally bad case in the lower jaw where the fracture was compound and comminuted, and in all three the result was complete success although no silver ligatures nor appliances of that kind were used. The fractures of the femur were treated simply as any ordinary case of compound fracture of that bone would be treated, namely: by newspaper coaptation splints, a modification of Liston's long splint, and Buck's extension and counter-extension apparatus by weight and pulley. In none

of these cases were any germicides or antiseptics used, although a strong effort in the direction of perfect surgical cleanliness was made, and in all the wounds healed rapidly and with very little irritation.

STONE IN THE BLADDER.

In regard to operations for the removal of urinary calculi great activity has prevailed and decided progress has been made in very recent times. If former generations were moved with admiration by the brilliant operations performed and the large ratio of successful results obtained by Cheselden, Liston, Dudley and others, our own generation has noted with at least equal gratification the practical results which have flowed from the persistent efforts and the wonderful scientific ingenuity of men like Thompson, Bigelow, Otis, Gouley and others, whereby it has been attempted to substitute for lithotomy safer and less formidable procedures.

The operation of lithotripsy and the instruments by which it is effected, have been most completely revolutionized, and I think we may almost say perfected, under our own eyes, while litholopaxy, or the operation of Bigelow, constitutes one of the many valuable additions to the long catalogue of surgical procedures rendered possible by the aid of anaesthesia. So successful have these methods been in the hands of their inventors and others, and so ingenious and plausible the arguments urged in their favor, that there has seemed to me to be some danger of their being too universally resorted to, to the exclusion of the time-honored operation of lithotomy. Recent utterances, however, such as those of Mr. Reginald Harrison, of England, encourage the hope that moderate and reasonable views will ultimately prevail, and that full justice will be done to *all* of the procedures in question. For my own part I have always believed and taught that, while lithotripsy and litholopaxy are valuable methods of getting rid of stone in the bladder, still there are substantial advantages in lithotomy which will always make it the best operation in a large and important class of cases. Mr. Harrison, in the article referred to (*The London Lancet*, February 4, 1888) says:

"Mr. Cadge, in his recent Hunterian lectures, pointed out that the recurrences of stone after lithotripsy are lamentably frequent; and if there were added to the list those numerous cases of phosphatic deposit or concretions so often noticed after this operation, the relapses, he believed, would reach nearly 20 per cent. The state of the interior of the bladder, relative to its shape, its power of contraction and the presence or absence of inflammation, has a determining influence in the reproduction of stone, and we have, I think, been rather too much disposed to allow the physical properties of the stone to determine for us, as it were, the selection of the operation, irrespective of these relative conditions. Though a hard stone is, as a rule, best treated by lithotomy, this by no means implies that some small and soft ones are the less advantageously removed by the same proceeding. Let me take, for instance, the case of a stone in the bladder occurring in an adult, with some chronic cystitis and enlargement of the

prostate. The probabilities are that for many months, if we look at a section of such a stone after its removal, the bladder has been engaged in encasing it in a mould of phosphates just as completely as if it were done by plaster of Paris. I have examined a very large number of bladders with prostatic hypertrophy and, having regard to the pouched condition of the viscus as well as the condition of the mucous membrane, relative to the presence or absence of phosphatic deposit upon it, it has often struck me not that lithotripsy has its failures, but that, under these circumstances, its successes are so numerous.

"Reflections such as these induced me, some years ago, to greatly alter my mode of procedure in cases of this kind, where either it was clear that the stone was the effect rather than the cause of disease, or where this fact was demonstrated by the failure of lithotripsy. The bladder, under these circumstances, resembles a chronic abscess with a stone in it, and it is just as necessary to open and drain the one as the other. In a man of 60, from whom large masses of phosphatic stone had been removed by three lithotrities, and who was never free from vesical irritation, I performed, two years after the first crushing, lateral lithotomy, and removed more phosphatic calculus of recent formation. His bladder was then drained and washed for eight weeks, until he voided normal acid urine, when the tube was removed and the wound healed in a month. This and similar instances are examples not merely of successful lithotomy, but of successful drainage. In the performance of lithotomy in cases of this description my aim is to make a wound into the bladder which will permit of very ready and efficient drainage, and which is not likely to close up before the interior of the viscus is ready for the reception and continence of the urine. Hence I am an advocate for lateral lithotomy, which best fulfils the conditions that are required. As a rule, cases of this kind require drainage to be continued from four to eight weeks, and I have drained them as long as ten weeks before the state of the bladder, as evidenced by the urine, was such as to allow the wound to heal up. . . . From a gentleman of 70, who for four years had passed his urine by catheter, I removed by lateral lithotomy three uric acid calculi of moderate size, coated with phosphates. I made a very free opening into the neck of the bladder, put in one of my largest-sized tubes and drained continuously for eight weeks, when the wound was allowed to heal. He can now expel his urine without assistance and has entirely discarded the catheter. It is remarkable that the bladder should have entirely recovered its power after so long a period of inaction as four years."

I have made this lengthy quotation from Mr. Harrison's lectures because it expresses very distinctly the views that have guided my own practice, and which I have been accustomed to teach for many years; and the following remarkable case from my own experience seems to me to furnish a strong argument in their support. In November, 1883, I was asked by Dr. Bennett to see a patient in the Wayne county house, who was suffering from stone in the bladder among other things. The history of the case

was briefly as follows: Five years previously, the patient had fallen from a building and injured his spine, causing complete paraplegia, with incontinence of urine. I found him confined to bed, suffering great pain from the presence of two very large stones in his bladder, and from all the disagreeable effects of complete incontinence of urine in a paralyzed man, including bedsores. I administered chloroform, removed the stones from his bladder by the left lateral operation, made provisions for thorough drainage and washing out of the bladder; and not only did the wound heal when permitted to do so but, when this took place, it was found, to the surprise of all, *that the patient had recovered complete control over his urine, which he retains to the present time.* The calculi were phosphatic and comparatively soft, so that they might easily enough have been removed by lithotripsy or litholopaxy. But will anyone say that either of these procedures could possibly have accomplished so great and beneficent a result for him as the operation which I performed did?

A good deal has been said in recent times in favor of the supra pubic or high operation of lithotomy; and no doubt there is an important field of usefulness for this method of opening the bladder. Still, I cannot believe that the advantages are sufficiently great to justify us in preferring it to the old operation of lateral lithotomy. On this subject also I think Mr. Harrison, in the lecture from which I have already quoted, has expressed himself in wise and conservative terms. Among other things he says:

"We must not be unmindful that experience has already shown us that supra-pubic cystotomy, like other procedures having the same object, has its own difficulties and dangers. Instances have been recorded where a weakened bladder under the pressure of distension has given way and death has then followed; and similarly the rectum has suffered in a corresponding manner, but without producing any serious consequences. To most of us the simplicity and ease with which lateral lithotomy can usually be performed is such as to strongly prejudice us in its favor in its absence of any special reason to the contrary such as I have indicated. Still, on the other hand, there are places for both the high and low operations in the practice of surgery which they can fill with relative advantage, and without fear of clashing."

The operation of cystotomy by the left lateral method, for chronic cystitis and chronic irritable bladder is one which I have practiced with most gratifying results in numerous cases, some of which are so striking in character that I would like to detail them here, but time does not permit.

One point of great practical importance in this connection must, however, be noted, namely the fact, long since pointed out by Sir Benjamin Brodie, that certain cases of chronic cystitis and chronic irritable bladder are associated with and dependent upon suppurating kidneys; and of course these cases should be carefully diagnosed and excluded from the class amenable to operation.

The undue length to which this paper has already extended compels me to omit all consideration of the

important fields of brain and thoracic surgery, in which, of late years, such brilliant results have been obtained, and in which there is strong promise of still greater progress in the near future.

Nor are these by any means the only subjects which the rapid flight of time warns me to omit the consideration of here, notwithstanding their great practical importance and their tendency to show forth the progressive nature of the surgery of our day. But here my discourse, fragmentary and incomplete as it unquestionably is, must stop. If the effect of anything that I have said should be to convey a favorable impression of the present condition and prospects of our beloved art, and to inspire even in the slightest degree hope and courage in the minds of those who, like myself, are struggling to promote and elevate its beneficent powers, I will be more than satisfied. In any event, I must always feel deeply sensible of the honorable trust reposed in me by my brethren of this section, and my highest ambition will ever be to prove myself in some degree at least worthy of the great honor conferred upon me. Certainly I know not any higher privilege or purer pleasure than that of contributing even in the least degree to the assistance, the gratification or the encouragement of the noble army of those who have enlisted for life in the arduous and beneficent service of surgery.

"Men my brothers, men the workers, ever reaping something new,
That which they have done, but earnest of the things that they shall do."

RECTAL INSUFFLATION OF HYDROGEN GAS AN INFALLIBLE TEST IN THE DIAGNOSIS OF VISCERAL INJURY OF THE GASTRO-INTESTINAL CANAL IN PENETRATING WOUNDS OF THE ABDOMEN.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May 9, 1888, and illustrated by three experiments on dogs.

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(Concluded from page 777.)

IV.—HYDROGEN GAS IS INNOCUOUS AND NON-IRRITATING WHEN BROUGHT IN CONTACT WITH LIVING TISSUES AND IS PROMPTLY REMOVED BY ABSORPTION.

a.—Peritoneal Cavity.

Experiment 53.—Dog, weight 45 lbs. A circumscribed spot to the right of the linea alba was shaved and thoroughly disinfected and through this space a well disinfected medium sized trocar was plunged into the peritoneal cavity. To the cannula of the trocar the rubber tube of the inflation balloon charged with hydrogen gas was attached and the whole peritoneal cavity filled with gas by compressing the balloon. About four litres of gas were injected. No gas escaped upon the withdrawal of the cannula and the puncture was sealed with cotton and iodoform collodium. The animal appeared to suffer

but little pain, and the next day the tympanitis had disappeared and the dog was as frisky and lively as before the inflation. Two days after the experiment was made the dog was killed and the peritoneal cavity carefully examined. Not a trace of the gas remained and the peritoneum throughout presented a normal appearance.

b.—Pleural Cavity.

Experiment 54.—Dog, weight 25 lbs. After thorough disinfection an aseptic hollow needle was inserted between the seventh and eighth ribs in the axillary line into the left pleural cavity and hydrogen gas from rubber balloon forced through it until the pleural cavity was thoroughly distended. On making a physical examination of the chest at this time the apex of the heart was found to the right of the sternum; vesicular breathing on left side absent, and on percussion of this side abnormal resonance. The respirations became superficial and greatly increased in frequency. On withdrawing the needle no gas escaped externally, but a circumscribed subcutaneous emphysema which appeared showed that some of the gas escaped through the puncture in the pleura into the subcutaneous connective tissue. Twenty-four hours after the inflation the dog appeared to be in perfect health. The normal relations in the chest had become restored and the subcutaneous emphysema was less extensive. The animal was kept under observation for a considerable length of time, but at no time could symptoms of pleuritis be detected.

c.—Subcutaneous Cellular Tissue.

Experiment 55.—Old dog, weight 43 lbs. A small perfectly aseptic trocar was inserted through the skin into the loose cellular tissue in the right inguinal region and through the cannula two litres of gas were injected, the gas distributing itself through the loose connective tissue over a large surface of the body. Upon the withdrawal of the cannula the puncture was hermetically sealed with iodoform collodium and cotton. The subcutaneous emphysema disappeared completely in forty-eight hours, and no traces of inflammation could be found at the point of puncture, or at any place where the gas had come in contact with the tissues.

Experiment 56.—Dog, weight 25 lbs. Subcutaneous inflation of two litres of hydrogen gas through the cannula of a small trocar into the left side of the chest. The subcutaneous emphysema reached from the clavicle and axilla on that side to the crest of the ilium, the gas at some points elevating the skin at least four inches from the subjacent tissues. The gas was absorbed somewhat more slowly than in the preceding experiment, but three days after the inflation no trace of emphysema could be detected and the subcutaneous connective tissue was as pliable and movable as before the inflation.

V.—RECTAL INSUFFLATION OF HYDROGEN GAS IN THE DIAGNOSIS OF PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN.

In these experiments the animals were strapped on one of Pasteur's operating tables. Abdomen shaved, and after complete etherization the shooting

was done at short range with a thirty-two calibre revolver. Inflation of hydrogen gas was practiced immediately after the shot was fired, and after its diagnostic value was carefully studied the abdomen was opened and its contents examined for visceral injuries. In all cases where the colon was perforated inflation could be done under very slight pressure, as the gas readily escaped into the peritoneal cavity, and from there through the bullet wound in the abdominal wall, where it was ignited as it escaped. As it is not the object of this paper to give the result of the operative treatment, the experiments will only be described in reference to diagnosis as verified by abdominal section, but in every case an attempt was made to save the life of the animal by operative treatment, and in a few instances the efforts were rewarded by success.

Experiment 57.—Dog, weight 30 lbs. The abdomen was opened by an incision through the linea alba and a coil of the small intestine was drawn forward into the wound, and an incision one-half an inch (12 mm.) in length was made on the convex side and the intestine returned. A small glass tube was inserted into lower angle of wound, and the rest of the wound closed by sutures. About two litres of hydrogen gas were inflated per rectum when the gas escaped through the glass-tube, and when ignited burned with a continuous steady blue flame as long as the inflation was continued. The wound was opened and a small quantity of gas was found in the peritoneal cavity. The whole intestinal tract below the visceral wound was found moderately distended by gas, while above the wound the intestine was normal in size.

Experiment 58.—Dog, weight 15 lbs. When the dog was completely under the influence of ether hydrogen gas was forced from anus to mouth, and while the abdomen was still moderately distended the animal was shot in the abdomen, the bullet being directed transversely from the point of entrance on the side of the abdomen two inches (5 cm.) to the right of the median line and on a level with the umbilicus. On applying a lighted taper to wound of entrance, and compressing the abdomen, hydrogen gas escaped and was ignited. When the inflation was resumed the gas burned with a continuous flame at the wound of entrance. The abdomen was then opened and two perforations in the stomach were found, one on the anterior surface near the pylorus, and the other on posterior surface at the cardiac extremity, about an inch above the omental attachment. The distension of the stomach by hydrogen gas had brought this organ within range of the track of the bullet.

Experiment 59.—Dog, weight 20 pounds. Under complete anaesthesia the animal was shot in the abdomen, the bullet taking the same direction as in the previous experiment, only that the track was about an inch (2.6 cm.) above the umbilicus. Immediately after the shooting hydrogen gas was inflated per rectum, and its presence in the abdominal cavity became evident by a marked tympanitis, absence of liver dulness, and later by a localized emphysema around the wound of entrance. As the pressure was

continued bubbles of gas escaped, and on applying a lighted taper, ignited with a feeble explosive report. The abdomen was opened, and the stomach showed two perforations, one just above the omental attachment near the pylorus, and the other on the same level at the cardiac extremity. Little hæmorrhage, and no extravasation of contents of stomach.

Experiment 60.—Dog, weight 30 pounds. Animal anaesthetized and shot in abdomen at a range of two feet; wound of entrance two inches to the right of, and on a level with, the umbilicus. Wound of exit one inch above the middle of left crest of ilium. Inflation of hydrogen gas per rectum soon caused extensive tympanitis, and as but little force had been used the conclusion was drawn that some part of the descending colon had been injured. As the gas did not readily escape through the bullet wounds a small cannula was inserted into the abdominal cavity through the wound of entrance, when the gas escaped freely and was ignited. On opening the abdomen examination revealed the following visceral injuries: Two perforations in the descending colon, four in the ileum, within a distance of ten inches of the ileo-cæcal valve, eight in the upper part of the ileum within the space of one foot (30 cm.) of the intestine. The mesentery was perforated at three points, and a number of mesenteric vessels of considerable size were severed, which gave rise to profuse hæmorrhage.

Experiment 61.—Large coach dog. The animal was completely etherized and shot in the abdomen at close range. Wound of entrance midway between linea alba and vertebral column on left side, a little below the level of the umbilicus; wound of exit close to last lumbar vertebra over crest of ilium on opposite side. Rectal inflation of hydrogen gas under slight pressure at once produced diffuse tympanitis, and the gas escaped freely through wound of entrance where it was ignited and burned with a large steady blue flame as long as the inflation was continued. On opening the abdomen gas escaped, but inspection showed that the small intestines contained no gas, a condition which pointed to the colon as the seat of perforation. One perforation was found in the anterior wall of the sigmoid flexure and two perforations in the cæcum. In the small intestines two perforations were found in the ileum near the cæcum, and three in the upper portion of the jejunum. Among the other organs injured were the spleen, the receptaculum chyli, and a number of perforations in the mesentery.

Experiment 62.—Large dog, profound ether narcosis. Shot in the abdomen, the bullet entering on a level with the umbilicus and about one inch to the left of the median line. Point of exit two inches from spinal column, and a little above the lower border of the chest. On inflating the rectum with hydrogen gas hardly any force was required to distend the abdomen, and for this reason it was believed that the colon in some part of its course had been injured. Gas escaped readily through the wound of entrance where it was lighted and burned with the characteristic blue flame. The abdomen when opened was found almost completely filled with

blood. The source of this profuse hemorrhage was the right kidney which showed a perforation through the centre. An examination of the gastro intestinal canal revealed two perforations of the cæcum, and five of the small intestines. After passing through the kidney the bullet perforated the diaphragm, traversed the pleural cavity and escaped through the chest wall two inches (5 cm.) to the right of the spine.

Experiment 63.—Old dog, weight 35 pounds. Thoroughly etherized and shot in the abdomen, the bullet entering three inches (7.4 cm.) to the right of, and an inch and a half (3 cm.) below, the umbilicus, passing almost transversely through the abdominal cavity it escaped at a corresponding point on left side. Inflation of hydrogen gas was attempted, but failed on account of the apparatus being out of order. The abdomen was opened and no gas was found even in the colon. Twelve perforations of the small intestines were found, and a number of perforations of the mesentery which had caused profuse hæmorrhage.

Experiment 64.—Large, black dog. Etherized and shot in the abdomen, wound of entrance three inches (7.4 cm.) to the right of, and an inch and a half below, the umbilicus; wound of exit near a corresponding point on opposite side, the bullet taking nearly a transverse course. Rectal inflation of hydrogen gas gave a prompt positive result. The abdomen was opened and five perforations of small intestine were found, besides laceration of thoracic duct, and a number of perforations in mesentery. Colon and small intestine below the lowest point of perforation contained gas, while above the lowest perforation the bowel contained no gas.

Experiment 65.—Dog, weight 25 pounds. Under full anaesthesia the animal was shot in the abdomen, the bullet passing nearly in a transverse direction through the abdominal cavity an inch and a half below the umbilicus from points of entrance and exit midway between linea alba and spine. Rectal insufflation of hydrogen gas made under very low pressure led to rapid distension of the abdomen, an occurrence which furnished strong evidence that the gas had escaped through a perforation in the colon into the peritoneal cavity. The gas escaped in bubbles through the wound of entrance, and when a lighted taper was held near the wound it burned with a jet varying in size. On opening the abdomen gas escaped from the peritoneal cavity, small intestines empty, and only a small amount of gas in the colon. The following intra peritoneal injuries were found: Four perforations of the duodenum, two of the jejunum, and one of the cæcum also a perforation nearly through the centre of the left kidney, laceration of the receptaculum chyli, and a number of perforations in the mesentery. The bullet was found between the left kidney and the abdominal wall.

In all of these experiments the bullet was fired through the abdomen from side to side transversely, or somewhat obliquely, directions which invariably brought into the track of the bullet a number of intestinal coils, and often the colon likewise. In the two experiments where the track of the bullet was a

little higher up the intestines escaped, but the stomach showed two perforations, one near the pyloric, and the other near the cardiac extremity. Rectal insufflation of hydrogen gas proved an infallible test in every instance, except in the case where it failed on account of the inflation apparatus being out of order. Contrary to the experience of other experimenters, I found that fecal extravasation does not uniformly take place soon after gunshot wounds of the intestines, and in the cases where I observed it some part of the colon had been wounded. Intestinal inflation does, therefore, not tend to increase the frequency of this occurrence, and must therefore be looked upon as a harmless measure in this direction.

Inflation, as a preliminary measure, greatly expedites the first step in the operation of abdominal section in cases where the intestine has been perforated or injured, as the gas which escapes into the peritoneal cavity separates the intestines from the anterior abdominal wall, and the incision can be made safely and rapidly without fear of wounding the intestines. Penetrating wounds of the abdomen, where the course of the bullet is in an opposite direction to that which has been described in the preceding experiments, that is in an antero-posterior direction, may not implicate the intestines at all, or if visceral injury is inflicted, it is more likely that only a single perforation exists, and never does the surgeon meet with such a multiplicity of lesions as have been cited above. Unless the surgeon can ascertain before hand that in a case of penetrating wound of the abdomen an injury to some portion of the gastro-intestinal canal exists, the very means which he resorts to in making an anatomical diagnosis is often an imminent source of danger, as only too often he may have to examine every inch of the gastro-intestinal canal for this purpose, a procedure which is always attended by great risk to life. If by such a simple and harmless procedure as insufflation of hydrogen gas he can satisfy himself that the gastro-intestinal canal is perforated, the course to pursue becomes clear—to open the abdomen, *seek for the perforation until he finds it*, and to adopt proper treatment for the visceral injury.

Cases have also happened in which the operator opened the abdomen, sought for, found and treated one or more perforations, and on making the autopsy a day or two later found, to his great chagrin and sorrow, a perforation which he had overlooked at the time of operation. It seems to me that in cases in which any doubt exists as to the integrity of the remaining portion of the intestinal canal, after closing one or more perforations, it would be advisable to search for additional perforations by resorting again to slow and careful inflation before the abdominal wound is closed. If no other perforations exist the gas will be confined to the interior of the gastro-intestinal canal, and if the stomach or intestines at some point difficult of access are injured, the leakage of gas through the perforations will lead the surgeon to the wound.

In the practical application of rectal insufflation of hydrogen gas, as a means of diagnosis in pene-

trating wounds of the abdomen, the field of possible operation should be carefully prepared by shaving and disinfection before inflation. After thorough disinfection of the external wound or wounds, and the field of operation, the patient should be placed thoroughly under the influence of an anæsthetic for the purpose of relaxing the abdominal muscles, which greatly facilitates the inflation. In the absence of a Wolf's bottle hydrogen gas can be readily generated in a large wide-mouthed bottle into which a small handful of chips of pure zinc is placed. The mouth of the bottle is closed with a cork with two perforations, through which two glass tubes are inserted, one for the purpose of pouring in water and sulphuric acid, and the other, which should be bent nearly at right angles, for leading away the gas. This glass tube and the rubber balloon with a capacity of 16 litres of gas are connected by means of a rubber tube. In from five to ten minutes the requisite amount of gas can be generated and everything is ready for the inflation. The rubber tube connecting the balloon with the rectal tip of an ordinary syringe should be interrupted by a stop-cock, so that the escape of gas can be prevented whenever inflation is temporarily suspended. The return of gas along the sides of the rectal tip can be readily prevented by an assistant pressing the anal margins firmly against it. The inflation must always be made slowly, as long continued, uninterrupted pressure accomplishes most effectively lateral and longitudinal dilatation of the cæcum, conditions which render the ileo-cæcal valve incompetent, and which must be secured before inflation of the small intestines is possible. The entrance of gas from colon into the ileum is always attended by a diminution of pressure, and its occurrence can invariably be recognized by a gurgling or blowing sound over the ileo-cæcal valve, and sometimes the sounds are sufficiently loud to be heard at some distance.

If, after inflation, abdominal distension and tympanitis be from the very first diffuse, and liver dullness has disappeared, it is a certain indication that it is due to the presence of gas in the peritoneal cavity, and not to distension of the gastro-intestinal canal. If, on the other hand, the distension and tympanitis follow the course of the colon, and after the entrance of the gas through the ileo-cæcal valve is circumscribed and limited to the umbilical and hypogastric regions, and gradually extends to the upper portion of the abdomen, and the liver dullness is displaced upwards, it is in all probability caused by a gradual and successive inflation of the intact bowel in an upward direction. In some penetrating wounds of the abdomen it is difficult, if not impossible, to follow the course of the bullet through the abdominal wall with a probe or finger on account of a relative change of position of the different layers of tissues in the track of the bullet obliterating the canal, but even in these cases a moderate distension of the peritoneal cavity by an accumulation of gas outside of the intestines will force bubbles of gas through the tortuous canal, and by this sign the surgeon may know positively that some portion of the gastro-intestinal canal has been perforated, and in order to prove that the bub-

bles which escape are part of the hydrogen gas which has been inflated he applies a lighted match or taper, and if it is hydrogen gas it will ignite with a slight explosive report, and burn with a characteristic blue flame. The burning of the escaping hydrogen gas on the surface of the external wound is a most effective means in securing for the wound an aseptic condition, and on that account the escaping gas should be lighted both for diagnostic and therapeutic purposes in all cases in which rectal insufflation of hydrogen gas reveals the presence of visceral injuries of the gastro-intestinal canal.

As the hydrogen gas from its low specific gravity will always occupy the highest space in a cavity partially filled with fluids, it is necessary to place the external abdominal wound in such a position that blood or any other fluid that may be present in the abdominal cavity will not interfere with its ready escape. If the wound is anterior the patient must be placed in dorsal position; if lateral, on the opposite side during the inflation. If during inflation early and diffuse tympanitis takes place, it speaks in favor of perforation of the colon.

Should the external wound prevent the escape of gas from the peritoneal cavity by sliding of the different layers of tissue of the wound in the abdominal wall, or by the presence of a coagulum in the track made by the bullet, it becomes necessary to secure a sufficient degree of patency of the wound for the escape of gas by careful probing or the removal of coagulated blood. The finding of perforations is also greatly facilitated by inflation, as the bowel below the lowest perforation will always be found at least slightly dilated by gas. If this perforation is now closed and additional perforations are suspected to exist the inflation can be repeated, and the bowel will again become distended as far as the next perforation, and this process can be repeated until the entire intestinal canal has been examined by this method. By searching for leaking points in this manner but little manipulation of the intestines becomes necessary, and thus one of the great sources of danger in the operative treatment of wounds or perforations of the gastro-intestinal canal is avoided. The moderate distension of the intestines left after treating the visceral wounds never interfered with the return of the intestines into the abdominal cavity or the closure of the external wound in any of the experiments, and the numerous observations made in reference to the disappearance of the gas by absorption, or escape through the natural outlets, are conclusive in showing that the distension due to the presence of the gas disappears in a remarkably short time, and it can therefore be safely stated that rectal insufflation of hydrogen gas in the diagnosis and treatment of penetrating wounds of the abdomen does not interfere with an ideal healing of the visceral and laparotomy wounds. After a careful study of the subject of rectal insufflation of hydrogen gas in its various aspects, I do not hesitate to recommend its adoption in practice as an infallible diagnostic test in demonstrating the existence of a wound of the gastro-intestinal canal in penetrating wounds of the abdomen or perforations from any other cause, with-

out resorting to an exploratory laparotomy. In conclusion I beg leave to submit for your discussion the following propositions:

1. The entire alimentary canal is permeable to rectal insufflation of air or gas.
2. Inflation of the entire alimentary canal from above downwards through a stomach tube seldom succeeds, and should therefore only be resorted to in demonstrating the presence of a perforation or wound of the stomach, and for locating other lesions in the organ or its immediate vicinity.

3. The ileo-cæcal valve is rendered incompetent, and permeable by rectal insufflation of air or gas under a pressure varying from one-fourth of a pound to two pounds.

4. Air or gas can be forced through the whole alimentary canal from anus to mouth under a pressure varying from one-third of a pound to two pounds and a half.

5. Rectal insufflation of air or gas to be both safe and effective must be done very slowly and without interruptions.

6. The safest and most effective rectal insufflator is a rubber balloon large enough to hold 16 litres of air or gas.

7. Hydrogen gas should be preferred to atmospheric air or other gases for purposes of inflation in all cases where this procedure is indicated.

8. The resisting power of the intestinal wall is nearly the same throughout the entire length of the canal, and in a normal condition yields to diastaltic force of from eight to twelve pounds of pressure. When rupture takes place it either occurs as a longitudinal laceration of the peritoneum on the convex surface of the bowel, or as multiple ruptures from within outwards at the mesenteric attachment. The former result follows rapid, and the latter slow, inflation.

9. Hydrogen gas is devoid of toxic properties, non-irritating when brought in contact with living tissues, and is rapidly absorbed from the connective tissue spaces and all of the large serous cavities.

10. The escape of air or gas through the ileo-cæcal valve from below upwards is always attended by a blowing or gurgling sound, heard most distinctly over the ileo-cæcal region and by a sudden diminution of pressure.

11. The incompetency of the ileo-cæcal valve is caused by a lateral and longitudinal distension of the cæcum which mechanically separates the margins of the valve.

12. In gunshot or punctured wounds of the gastrointestinal canal insufflation of hydrogen gas enables the surgeon to demonstrate positively the existence of the visceral injury without incurring the risks and medico-legal responsibilities incident to an exploratory laparotomy.

THE CONSUL GENERAL at Honolulu reports that many lepers leave the Sandwich Islands as soon as the disease appears, the greater number coming to the United States, in order to prevent being banished to the Island of Molokai.

THE

Journal of the American Medical Association. PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JUNE 30, 1888.

COMPLETION OF VOLUME X.

The present number completes the tenth volume of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and the fifth year of its publication. As usual, it is accompanied by a full index and title-page, convenient for binding and future reference.

At the beginning of the fourth year, volume ix, it was found necessary and convenient to enlarge THE JOURNAL by the addition of four pages to the department for papers and original contributions, by which volumes ix and x were made to contain 832 double-column pages each, or a total of 1,664 pages for the year. Such has been the progress and material development of interest in THE JOURNAL that we shall commence the sixth year, volume xi, July 7, with the further addition of four more pages to the reading-matter, and present the whole in a new typographical dress—improvements that, we trust, will be gratifying to all its readers. This will make each of the future volumes contain 936 pages, or a total of 1,872 for the year, which is more than four times as much important reading-matter as members of the Association received in the single annual volume of Transactions before THE JOURNAL was established, and yet without any increase in the amount of the annual membership dues from each member. Under the former arrangement all the papers and proceedings were distributed in one volume not until from six to nine months after each annual meeting; while in THE JOURNAL at present every member gets, each week, as large an installment of papers and reports as he can find time to read, and before the time he formerly received his single volume he has already had not only all the papers

of the Association, but along with them a great variety of additional matter of equal value with that derived directly from the Association. Our chief embarrassment now is that so large a proportion of writers desire to have their papers published *at once*, apparently forgetting that they cannot have a journal regularly each week and at the same time have all the contents designed for six months put into the first six weekly issues. However, during the brief time we may continue to edit *THE JOURNAL* we shall continue, as heretofore, to give in each number of *THE JOURNAL* the greater part of the original department to such variety of the papers of the Association as will afford something of interest for the greatest number of readers, and a little space to voluntary contributions, remembering that a large proportion of these are also from members of the Association, and equally entitled to a hearing.

EDITORIAL NOTES.

ASSISTANT SECRETARY OF THE AMERICAN MEDICAL ASSOCIATION.—Dr. John B. Hamilton, who was Secretary of the Nominating Committee, writes that by an inadvertence he failed to put Dr. W. Thornton Parker, of Newport, R. I., on the list of nominees as reported by the Committee, for Assistant Secretary of the Association.

A MAN WITHOUT A LARYNX.—The Paris correspondent of the *Lancet* writes that he has recently seen a man, aged 37 years, upon whom Dr. Péan performed ablation of the larynx on February 27, 1886. He still wears the cannula introduced at that time, and when he speaks he closes the orifice of the cannula with his finger. His voice is not very audible, but is distinct.

NORTHWESTERN UNIVERSITY.—On Commencement Day, June 21, 1888, the corner-stone of the astronomical observatory building was laid with appropriate ceremonies, on the University grounds, at Evanston. The \$25,000 required for the building was generously donated by Mr. J. B. Hobbs, of Chicago.

THE AMERICAN RHINOLOGICAL ASSOCIATION will hold its sixth annual meeting at Cincinnati, Ohio, September 12, 13 and 14, 1888. Secretary, Dr. John North, Keokuk, Iowa.

DR. E. MILLER REID, of Baltimore, has recently been elected Professor of Physiology, Hygiene and Clinical Medicine in the Baltimore University School of Medicine.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Held at Philadelphia, June 5, 6, 7 and 8, 1888.

(Concluded from page 792.)

THURSDAY, JUNE 7—THIRD DAY.

DR. H. C. WOOD, of Philadelphia, delivered the ADDRESS IN MENTAL DISORDERS.

The paper was devoted to considerations of the medico-legal relations of insanity. Reference was made to certain defects in the Pennsylvania lunacy laws. It was thought that trials in which this question arose might be rendered more just if an alienist should be on the bench as associate judge, or by reference to a commission whose finding might possibly be subject to review by the judges. Another recommendation was that the jury of six provided for by the law should be substituted by a commission of three, one to be a member of the legal profession, one of the medical profession, and one a man of business. In conclusion, the following resolution was offered:

Resolved, That the President be directed to appoint a committee of — members, who shall confer with the State Committee of Lunacy, and if, in the concurrent opinion of these committees, any changes are advisable in our laws relating to lunacy, shall have the power to represent this body in obtaining such legislation.

Action was deferred until later in the session.

Dr. J. Chris. Lange, of Pittsburgh, read a paper on *Some Influences of Disease upon the Mind*.

The *Address in Surgery* was delivered by Dr. Jas. McCann, of Pittsburgh, the subject being *Brain Surgery*.

The resolution presented by Dr. Jackson, on Tuesday, in regard to the

BOARD OF MEDICAL EXAMINERS

was taken up.

DR. J. H. PACKARD moved that the whole matter be referred to the Judicial Council for a decision whether or not the bill is in conformity with the Code of Ethics of American Medical Association.

This was decided out of order, on the ground that the Society had already on two occasions approved of this bill, and that the American Medical Association had approved a similar bill.

The resolutions were then adopted.

DR. JOHN V. SHOEMAKER, of Philadelphia, read a paper on

THE CAUSE AND TREATMENT OF PSORIASIS.

A patient was exhibited who had been the subject of repeated attacks of psoriasis for the past nineteen years. The interesting point was that each attack was associated with an attack of rheumatism. Various methods of treatment had been tried without avail. The author intended to try the effect of suppositories of $\frac{1}{4}$ to $\frac{1}{2}$ grain of arsenious acid, the object being to make some impression upon the rheumatic state of the system.

AFTERNOON SESSION.

DR. B. ALEX. RANDALL, of Philadelphia, delivered the

ADDRESS IN OTOTOLOGY.

Attention was mainly directed to the treatment of ear disease by the general practitioner.

DR. L. J. LANTENBACH, of Philadelphia, then read a paper on

PREVENTION OF EAR DISEASE.

The paper referred to the prevention of ear affections by proper care in childhood.

DR. HARRISON ALLEN, of Philadelphia, read a paper on

GOUTY SORE THROAT,

giving the diagnostic points, and the methods of treatment which he had found of service.

DR. J. WILLIAM WHITE exhibited two patients on whom the

RADICAL OPERATION FOR THE CURE OF HERNIA

had been performed. Case one, was one of complete oblique inguinal hernia. The bowels became strangulated in the sack by bands of lymph. The constriction was divided. The upper portion of the sack was drawn downward and tied. It was then removed. The stump was then next secured in the ring. The tissues on either side were brought together, the skin being not included. The upper two-thirds of the wound were closed in this way. The lower third was packed with iodoform gauze. Patient recovered without a bad symptom, and at present, ten weeks after operation, there is no signs of return of the hernia. In a second case, a similar operation was performed with the exception that an undeveloped testicle lying in the inguinal canal, and giving rise to pain, was removed.

DR. H. F. HANSELL, of Philadelphia, read a paper on

INSUFFICIENCY OF THE INTERNAL RECTI MUSCLES.

The following conclusions were presented:

1. In all cases of continual functional headache the extrinsic muscles of the eye should be examined.
2. Insufficiency is found in cases of emmetropia, hypermetropia, myopia and astigmatism.
3. The condition can be relieved by prisms and by tenotomy; when less than 10° by prisms, when greater, by the latter method.

In the experience of the speaker operation on both eyes had not been necessary.

DR. HEYL, of Philadelphia, read a paper on

CERTAIN EYE SYMPTOMS IN BRAIN DISEASE.

The object was to describe two abnormalities which he had met with. The first abnormality is the injection of a fine series of vessels coming off at right angles from the main retinal trunks. This he had found in cases of melancholia and also in meningeal congestion.

The second observation: Normally the combined calibre of the two vessels into which the central retinal artery divides is equal to that of the central ar-

tery. The abnormality consists in a diminished calibre of these two branches. This had been found in cases in which there was reason to suspect disturbance of the intra-ventricular fluid.

DR. CHAS. W. DULLES, of Philadelphia, made a

REPORT ON HYDROPHOBIA,

in which he maintained that in the human being so-called hydrophobia was not a true infectious disease.

DR. E. O. SHAKESPEARE thought that experimental research showed that hydrophobia was an infectious disease. The crucial test is the inoculation of rabbits with the medulla of individuals dying with hydrophobia and the transmission of the disease to the animal in this way. This test had been satisfactorily applied in many cases.

On motion Dr. Dulles was requested to continue his studies and report at the next meeting of the Society.

The President announced the following appointments for next year:

Address in Medicine, Dr. J. C. Wilson, Philadelphia.

Address in Surgery, Dr. J. B. Roberts, Philadelphia. Address in Obstetrics, Dr. F. N. Baker, Delaware Co.

Address in Hygiene, Dr. Thos. J. Mays, Philadelphia.

Address in Mental Disorders, Dr. Alice Bennett, Montgomery Co.

Address in Laryngology, Dr. W. H. Daly, Allegheny.

Committee to consider the Medical Examiners Bill, Drs. L. F. Flick, Edward Jackson, E. A. Wood, L. H. Taylor and Wm. F. Waugh.

Dr. Goodwillie, of New York, then read a paper describing *New Methods of Treatment of Hare-Lip and Cleft Palate in Infants*.

Dr. E. A. Wood offered a resolution as follows:

WHEREAS, The four Hospitals for the Insane under the care of the State of Pennsylvania are at present organized on either of two radically different plans, each claiming better results,

Resolved, That the President of this Society appoint a committee of thirteen, which shall include the superintendents and chief physicians of such State hospitals, to investigate into the relative merits of the two systems and report at the meeting of this Society in 1889. Adopted.

The afternoon session closed with a paper by Dr. Laurence Turnbull, Philadelphia, describing a case of ear disease in which a portion of the mastoid cells on one side were discharged, and on the other the semicircular canals and cochlea. There was facial paralysis, the portion of the bone through which the facial nerve passes also coming away. There was still a certain amount of hearing. The ear trouble had followed an attack of scarlet fever and diphtheria.

FRIDAY, JUNE 8—FOURTH DAY.

After the transaction of some routine business and the presentation of the newly elected officers, the Society adjourned to meet in Pittsburgh, the third Tuesday of May, 1889.

DOMESTIC CORRESPONDENCE

LETTER FROM BOSTON.

(FROM OUR OWN CORRESPONDENT.)

The Massachusetts Medical Society. One Hundred and Seventh Anniversary.

Private Mental Sanitaria and Inebriates—Therapeutic Nihilism—Uterine Displacements and their Influence on the General Nervous System—The Modern Practice of Surgery—Statistics and Climatology of Phthisis and Pneumonia in Massachusetts—Officers.

The one hundred and seventh anniversary of the Massachusetts Medical Society was held in Boston, June 12 and 13, and was attended by a number somewhat larger than usual of its members from various parts of the State.

First day, June 12.—The forenoon was devoted to an acceptance of the invitation to visit the Massachusetts General Hospital, the Boston City Hospital, the Children's Hospital, and the Carney Hospital. In the afternoon several interesting papers were read and discussed. The President of the Society, Dr. Thomas H. Gage, of Worcester, opened the meeting, and after a few words of welcome, called upon (1.) Dr. A. W. Thompson, of Northampton, who read a paper on "Private Mental Sanitaria and the Inebriates." The reader referred to the late Dr. S. B. Woodward, the first Superintendent of the State Asylum at Worcester, who, in 1835, held that inebriety is a disease, and that there should be a separate State hospital for its treatment. Whatever poison has produced the inebriety, the disease has reached the mind, and is a psychosis, and like other psychoses it should be treated as such. The inebriates should never be sent to an asylum, although many cases of inebriety have been cured in these. They have an injurious effect on the other classes. There should be one or two special places for inebriates, and these should be divided into wards and so forth, since these patients may be offensive to each other. The cottage and private hospital system, some say, are not suited to any psychosis; but the reader thinks that the whole system lay in a public need, and it has done much good work, although it is hardly more than fifteen years since it began. It now has firm root in New England and has stood the test of experience. In one particular, the large asylum has the advantage in the treatment of psychoses, viz., the fact that the public Superintendent is a salaried officer, and is in a judicial relation to his patients. Secrecy as to his method is not possible, his reputation is not local, and there has to be no consideration of a private account at the bank. In many cases, discipline should be prescribed in doses, the same as we prescribe quinine or apply splints.

The ideal hospital, however, is the private hospital over which presides an ideal Superintendent. Honesty is the best policy in dealing with the insane. It is best he should be told that he is insane, and he should know the manner and the mode of restraint.

The discussion was opened by Dr. Edward Cowler,

Superintendent of the McLean Asylum at Somerville, who said that this is a very important subject. The treatment of inebriety is a burning question of the day. It is a psychosis. There have been occasional cases at the McLean Asylum, which is private but of larger dimensions than is usual for a private institution, and some of them have been cured; but the rule is: not to receive them. Experience shows that patients partly well, are unable to accommodate themselves to their surroundings. They make more demands, and they are of no assistance to the Superintendent in the care of others. There are also difficulties in the treatment of these cases in sanatoria, especially since a very small proportion of the patients who go there will remain long enough for a complete cure. Therefore there should be a special hospital for inebriates, when the inebriety has become a disease, and it should be under special law as to commitment, detention, etc.

Dr. Walter Channing, of Boston, endorsed Dr. Cowler in his statement that the treatment of inebriety is a failure in large hospitals. The compulsory law as to commitment now in force is a little aid to the friends, but it affords no relief to the inebriates themselves. Perhaps the patients can be kept happier in a small "home;" but this is no better fitted to cure them, and only certain patients can be satisfactorily treated in small places. The most violent should go to the large institutions. Dr. Channing also advocated a special institution for inebriates, with a special law as to commitment and detention for a definite period.

Dr. Charles P. Bancroft, Superintendent of the N. H. State Insane Asylum at Concord, thought that the proper care of the inebriates is difficult in public institutions, and probably it is so, too, in the private. Some special legislation is necessary, and in addition to the views of the other speakers, he advocated a certain amount of enforced labor; for the inebriate is generally lazy, and enforced idleness is demoralizing.

2. A paper entitled "Therapeutic Nihilism" was read by Maurice D. Clarke, M.D., of Haverhill, who began with the remark, that it has been said that there is a tendency toward therapeutic nihilism in Boston. If by this, is meant that we sit at the bedside with folded hands, and are waiters, and not workers, it may be somewhat true. The laity, however, necessarily, expect that we shall "do something." How often, after all details for the comfort and care of the patient have been carefully attended to, and accurate instructions for the continuation of the same, have we been asked: "But ain't you going to do something, doctor?" And this feeling is somewhat shared by the doctors themselves. One man said somewhere recently, that whereas rheumatic fever formerly meant Dover's powder and six weeks, it now means salicylic acid and six days. The lancet has now disappeared, and new drugs are coming on, which are advocated as specifics. Note how antipyrin and cocaine are said to be "good in" so many different diseases. Note also the old editions of the dispensaries and their similar statements concerning other drugs. The vast number of physi-

cians who are now annually sent out, materially aids in this. They look upon the practice of medicine as a trade, and they merely exchange the carpenters saw and the grocers scales for the scalpel and quinine. The treatment of the sick is a matter of temperament, and prevention, hygiene, and medication, etc., are the methods. Some run after new fashions, and thus we have experimental therapeutics; vicarious therapeutics; routine therapeutics; and rational therapeutics. Dr. Jacob Bigelow said fifty years ago: "The rational American requires evidence of what he may believe." However medication was in vogue then. It is not now so.

In discussion Dr. F. H. Williams, of Boston said that the term "experimental therapeutics" had had various interpretations, and the most modern of them deserves attention. Within the last few years there has arisen a new way of studying the action of drugs, chemically and physiologically, in large laboratories erected for the purpose. This is the case especially in Germany. When a drug is found here to have value, it is quite likely that it will be of some service to the practitioner. This study has just been begun. Recipes should become simpler. A mixture with a dozen or so ingredients is a mistake, and only one drug used for a definite purpose would be better.

Dr. E. P. Hurd, of Newburyport, remarked that there is a tendency among the junior practitioners to have almost unbounded faith in drugs, especially till they are taught by experience what is of the greatest advantage. Meddlesome treatment is bad. Much is to be expected from the germ theory.

3. Dr. Francis H. Davenport, of Boston, then read an exhaustive paper on "Uterine Displacements and their influence on the General Nervous System." The reader said these uterine displacements have been recognized from the very earliest time. They give rise to both local and general symptoms. The *tactus eruditus* is now seeking new worlds to conquer, and trained men can now find by palpation the Fallopian tubes and the ovaries, and even the round ligaments. Next will follow the palpation of the ureters and some of the muscular tissues. In the treatment pessaries of all forms are recommended. Progress, however, is now in the direction of operative measures which are now daily performed, much bolder than was dreamed of twenty years ago: e. g., laparotomy and suturing of the uterus to the abdominal walls for the cure of retroflexion, Alexander's operations on the round ligaments, Sanger's method of tearing the adhesion binding down a retroflexed uterus, and Byford's operation for shortening the round ligaments through the vagina.

Curiously enough the normal position of the uterus has been settled only very recently. It is absurd to apply the same rules to the uterus as to a fixed body like the kidney. It is now considered that the normal position of the uterus varies within certain limits according to the conditions of distension of the bladder and rectum. The variations outside of these normal limits are considered by some to be the causes and by others the effects of the other troubles and

symptoms; and their treatment, locally or generally, varies accordingly. Neither extreme is probably correct, but there is a mean between them.

The relationship between the genital organs and the nervous system is so rigid that it was on this account the ancients applied the term hysteria to certain nervous affections. This is not absolutely correct; for hysteria may occur in men as well as in women. Hysteria in women and neurasthesia due to the genitals generally occurs between the ages of puberty and the menopause. Ovarian disease is probably the most active in causing these nervous disturbances. Also neglected lacerations of the cervix will do it, especially if the perineum is also torn. Chronic metritis, etc., and displacements add to the difficulties. Backward displacements are more severe, occur oftener, and are of greater degree. Hence from them the disturbance is greater. Anteversion, pure and simple, occurs rarely, but when complicated with descent it is not rare. Retroversion is the most common form of displacement, and if the angle of displacement is not over 90° there may be no symptoms. If greater than this, there occurs pressure on the rectum, etc., and the greater it is the more the weight of the intestines comes upon the uterus and we have prolapse also. The minor grades are not detected in the ordinary method of examination, for the uterus falls back. To detect such minor degrees the standing position is the best. Displacements are not always primary. When they are primary the treatment should be local, unless the general tone is too bad to allow it until this is improved. If there are no adhesions the replacement, even in the unmarried patient, can be made at one sitting under ether. If there are adhesions the slow method of packing the vagina will be necessary. If there are tears of the perineum of and importance, which may occur even if they do not appear so from the outside, these should be first repaired.

4. A paper on "The Modern Practice of Surgery" was next read by Dr. Otis K. Newell, of Boston, who said, that men live so much in their own day that they are apt to think no further improvement possible. In the old day the peritoneum was considered fatal even to the touch; now the danger of exploration of the peritoneum is chiefly nil. Intercommunication so aids in the dissemination of knowledge that it is hard to keep properly informed. Particularly have the studies regarding antiseptic treatment been so great that it is almost impossible to keep pace. A successful combination of the physician with the surgeon is impossible. The surgeon should have special training. A man should not now be allowed to die of appendicitis since it has been worked up by some. Antisepsis and asepsis are now as important as anesthesia, and the surgeon should be held accountable for aseptic healing. We can now successfully operate, 1. Upon organs in the cavities, as in the pleural, peritoneal and the meningeal cavities. 2. Resection of organs in continuity. 3. Resection of individual organs. 4. Extirpation of organs. 5. Replacement of defects by transplantation in plastic operations from the same

or other individuals or from animals. 6. Restoration and retention of displaced organs. Also Bigelow's lithopaxy and endoscopic examination of the bladder. Orthopedic surgery is now taking the place of mechanical treatment. The surgeon should not be deterred from operation by a possibility of bad result. Then the reader referred to the relation of legitimate medical practice to quackery, saying that "In medicine, unlike any other science, the quack is only readily detected by him who is well versed in the art itself, and it, therefore, devolves upon the physician more than any one else to aid in his exposure and extermination. If the united efforts of this Society cannot soon succeed in establishing the most effective laws for the quick suppression of such vice, there is one way, I believe, in which it can be done. I refer to the education of the public in general medical, hygienic and sanitary affairs. In other communities this is already being done with great effect, and here in spite of the insulting lack of legal support, the medical profession is doing much in the same direction. The great value in educating the public in regard to the prevention and cure of disease is already recognized, and quite universally, to a greater or less degree, especially in hygienic and sanitary matters, being put into practice.

5. The next paper, "A Study of Phthisis and Pneumonia in Massachusetts, Statistical and Climatological," read by W. Everett Smith, M.D., of Boston, showed an exhaustive research into the statistics which were available to the writer, but no idea of the value of it nor the amount of labor involved in its preparation can be given without a reproduction of the admirable tables which so graphically stated the facts obtained by the writer.

The paper was inspired by a statement of Dr. H. I. Bowditch, who said in 1862 that consumption was not equally distributed in accordance with the amount of soil moisture. It is impossible, however, to establish this at present, since there are no data, and the Society passed a vote appointing Dr. Smith a committee to confer with Prof. Shaler and Gen. Greeley on this subject, who within the next three years will publish a series of fifty-two maps in relation to this subject, showing the soil structure and other geological features.

In connection with the meeting there is an exhibit of drugs and preparations, foods, surgical instruments and apparatus, books, etc., by the leading manufacturers and dealers of Boston and New York. There are also some very interesting, curious old instruments loaned by the Harvard Medical School; and some excellent models of very large size, of bones, muscles, etc., designed by Dr. Thomas Dwight for purposes of instruction in anatomy.

OFFICERS FOR ENSUING YEAR.

The following officers were elected by the Councilors for the ensuing year:

President, Dr. David W. Cheever, of Boston; Vice-President, Dr. George Jewett, of Fitchburg; Treasurer, Dr. Frank W. Draper, of Boston; Corresponding Secretary, Dr. Chas. W. Swan, of Boston; Recording Secretary, Dr. Francis W. Goss, of Rox-

bury; Librarian, Dr. Edwin H. Brigham, of Boston; Orator, Dr. Henry P. Walcott, of Cambridge; Anniversary Chairman, Dr. James R. Chadwick, of Boston.
(To be concluded.)

MISCELLANEOUS.

DR. S. WEIR MITCHELL.—The University of Bologna, on the occasion of the eight hundredth anniversary of its foundation, conferred its honorary degree upon several representatives of literature, science and art, and included in the list was Dr. S. Weir Mitchell, of Philadelphia, who represented the National Academy of Science on the occasion.

IMPURE WATER.—In Canton, Mass., the employés of the rolling department have been prostrated by drinking impure water to such an extent that it is feared it will be necessary to close the works of the Kinsley iron and machine company.

A MONUMENT TO COHNHEIM was unveiled at Leipzig, with appropriate ceremonies, on June 3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 16, 1888, TO JUNE 20, 1888.

Major Wm. E. Waters, Surgeon, granted leave of absence for twenty days, to take effect about June 15, 1888. S. O. 64, Dept. Columbia, June 8, 1888.
Major Calvin DeWitt, Surgeon, granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Dept. Dak., June 9, 1888.
Major Robert H. White, Surgeon, ordered from Angel Island, Cal., to Ft. Myer, Va. S. O. 142, A. G. O., June 20, 1888.
Capt. Curtis E. Munn, Asst. Surgeon, ordered from Ft. Klamath, Ore., to Angel Island, Cal. S. O. 142, A. G. O. June 20, 1888.
Capt. Geo. H. Torney, Asst. Surgeon, relieved from duty at Ft. Monroe, Va., and ordered to Ft. Randall, D. T. S. O. 142, A. G. O., June 20, 1888.
Capt. Geo. McCreery, Asst. Surgeon, relieved from duty at Ft. Meade, D. T., and ordered to Ft. Monroe, Va., for duty. S. O. 142, A. G. O., June 20, 1888.
Capt. Wm. C. Gorgas, Asst. Surgeon, relieved from duty at Ft. Randall, D. T., and ordered to Ft. Barrancas, Fla. S. O. 142, A. G. O., June 20, 1888.
First Lieut. Edward R. Morris, Asst. Surgeon, leave of absence granted in S. O. 61, May 28, 1888, Dept. of Ariz., extended one month. S. O. 142, A. G. O., June 20, 1888.
First Lieut. Eugene L. Swift, Asst. Surgeon, ordered from Ft. Spokane, W. T., to Ft. Klamath, Ore., for temporary duty. S. O. 142, A. G. O., June 20, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 23, 1888.

Asst. Surgeon K. P. Crandall, from "Minnesota" and to the "Saratoga."
Medical Director Edward Shippen, placed on retired list June 18, 1888.
Asst. Surgeon J. S. Sayre, to the Navy Yard, New York.
Medical Inspector Michael Bradley, ordered to examination for promotion.
Surgeon Edward Kershner, ordered to Marine Rendezvous, New York.
Surgeon C. H. White, detached from Museum of Hygiene and wait orders.
Surgeon J. Rufus Tryon, from Marine Rendezvous, N. Y., and special duty, N. Y.
P. A. Surgeon Rufus McCarty, from Naval Hospital, Chelsea, Mass., and to the "Yantic."
P. A. Surgeon L. G. Hemeberger, from special duty, New York, and to the "Minnesota."
Asst. Surgeon I. W. Kite, from "Yantic" and to the "Richmond."
Surgeons Woolverton, White, Woods and DuBois, ordered for examination preliminary to promotion to the grade of Medical Inspector.

INDEX VOLUME X.

AGE.	AGE.	AGE.
ABDOMEN, gunshot wounds of..... 240	Anæsthetic, Haya the new..... 443	Artery, femoral, rupture of with fracture of femur..... 493
penetrating wounds of, insufflation of hydrogen gas in..... 767, 771, 807	Anæsthetics, suspended animation from, inversion in..... 4, 3, 504	Arthrorectomy for white swelling of knee..... 439
Abdominal section (see laparotomy)..... 512	Analgesic, theine as an..... 512	Arthritis, rheumatoid, nervous origin of..... 139
surgery, cases of..... 546	Anatomical Board of Georgia..... 724	Asides, marked, in cirrhosis of liver..... 120
Abortion, for uncontrollable vomiting..... 147	Anatomy, practical, in District of Columbia, bill for promotion of..... 412, 431	Aspesis, and puerperal fever..... 667
threatened, ergot and morphine in..... 624	Andrews, Dr. F. T., appointment of..... 435	Assthurst, triple amputation for railway injury..... 479, 496
Abcess cavity, ligation of common carotid in..... 172	Aneurism, aortic, digitalis in..... 535	Association, American for the cure of Inebriety..... 716
cerebellar, from disease of ear..... 177, 202	aortic, rupture of..... 47	Medical, Assistant Secretary..... 712
cerebral, trephining for..... 44	double of aorta..... 366	meeting, programme..... 436
of liver..... 156	Angina pectoris of syphilitic origin..... 277	membership in..... 434
of spleen, operation for..... 315, 516	Annales de Laboratoire de l'Hospice des Quinze Vingts..... 412	mission of..... 573
pelvic, encysted..... 516	Antagonism, physiological..... 455	officers of..... 75
pericæcal, diagnosis and radical treatment..... 733	Anthrax in dermatology..... 462	official record of meeting..... 636
perirectal, surgical treatment of..... 312	Anthrax permanganate of potash in..... 762	proposed constitutional changes..... 329
retrosternal, resection of sternum for..... 111	Antifebrin, in febrile diseases..... 332	Section of Rhinology and Laryngology..... 577
Abcesses, spinal, treatment of..... 757	toxic effects of..... 658	American of Genito-urinary surgeons..... 542
Acetanilide, antagonist to nicotine..... 723	Antipretic, nitromuriatic acid as an..... 65	of Obstetricians..... 572
Acetanilide-monobromo..... 586	treatment of phthisis..... 363	Rhinological..... 512
Acetic acid as an eccholic..... 585	Antipyrin, antagonist to nicotine..... 723	Surgical..... 540
in post-partum hemorrhage..... 561	as a uterine sedative..... 143	Medical of Alabama, officers..... 564
Acetophenanthrene..... 366	dangers and contraindications of..... 492	Medical, of Georgia..... 504
Acid, chromiomatic, germicidal and antiseptic properties of..... 65	in epilepsy..... 452	Mississippi Valley Medical..... 689
Ackland, Sir Henry..... 380	in labor..... 665	New York County Medical, officers..... 137
Acne, treatment of..... 153	in migraine..... 232	of American Institutions for Idiots and Feeble-minded persons..... 762
Acne, treatment of..... 153	in sea-sickness..... 144	of American Medical Editors..... 752
Acne, treatment of..... 153	sustained injections of..... 44	address to..... 579
Address in Medical Jurisprudence..... 701	synergist to strychnine..... 491	Rocky Mountain Medical..... 168
in Medicine..... 662	when should it be given?..... 491	Sanitary Inspectors..... 787
in Ophthalmology..... 795	Antisepsis, intestinal in typhoid..... 369	Asystolic, of renal origin, digitalis in..... 782
in Surgery..... 797	Antiseptic, aceto-tartrate of aluminum as..... 144	Asystolic, of renal origin, digitalis in..... 782
in State Medicine..... 797	an intestinal..... 302	Asymlism, of renal origin, digitalis in..... 782
President's..... 373, 387	inhalations in lung disease..... 445	Asymlism, of renal origin, digitalis in..... 782
Adenoid vegetations of vault of pharynx..... 104	nitromuriatic acid as an..... 65	Asymlism, of renal origin, digitalis in..... 782
Adulterations, in cocaine..... 307	method of treating burns and scalds..... 654	Asymlism, of renal origin, digitalis in..... 782
Agnew, Dr. C. W., death of..... 568, 569	lozenges in lung diseases..... 143	Asymlism, of renal origin, digitalis in..... 782
illness of..... 415	properties of tartaric acid..... 334	Asymlism, of renal origin, digitalis in..... 782
obituary of..... 537	trinitrophenol..... 204	Asymlism, of renal origin, digitalis in..... 782
portraits of..... 795	treatment..... 131	Asymlism, of renal origin, digitalis in..... 782
Dr. D. Hayes, fiftieth anniversary..... 556	of boils..... 277	Asymlism, of renal origin, digitalis in..... 782
Air passages, upper, therapeutics of..... 186	of diphtheria..... 214	Asymlism, of renal origin, digitalis in..... 782
purification of in rooms of phthisical patients..... 28	of phthisis..... 363	Asymlism, of renal origin, digitalis in..... 782
rectal insufflation of..... 770	Antizymotic, nitromuriatic acid as an..... 65	Asymlism, of renal origin, digitalis in..... 782
sterilized, injections of in pneumonia..... 654	Antiprothres, in treatment of gonorrhœa..... 284	Asymlism, of renal origin, digitalis in..... 782
Alabama Medical Association, officers..... 683	Anus, artificial, for encephaloid obstructed..... 546	Asymlism, of renal origin, digitalis in..... 782
Alaminate of mercury in syphilis..... 413	atresia of..... 221	Asymlism, of renal origin, digitalis in..... 782
Albumen, injections of and albuminuria..... 302	Aorta, aneurism of, digitalis in..... 535	Asymlism, of renal origin, digitalis in..... 782
Albuminosis in medicine..... 312	double..... 360	Asymlism, of renal origin, digitalis in..... 782
Albuminuria, contribution to study of..... 740	rupture of..... 425	Asymlism, of renal origin, digitalis in..... 782
cyclical..... 110	Aortic valve, rupture of..... 536	Asymlism, of renal origin, digitalis in..... 782
ecclampsia with..... 357	Aphonia, complete..... 536	Asymlism, of renal origin, digitalis in..... 782
injections of albumen and..... 302	Appendicitis, symptoms of..... 711	Asymlism, of renal origin, digitalis in..... 782
in pregnancy, induction of labor in..... 166	diagnosis of..... 712	Asymlism, of renal origin, digitalis in..... 782
Alcohol, in its relations to inebriety..... 126	prognosis of..... 712	Asymlism, of renal origin, digitalis in..... 782
in therapeutics..... 752	treatment of..... 712	Asymlism, of renal origin, digitalis in..... 782
therapeutics without..... 412	Appendix vermiciformis, anatomy of the..... 703	Asymlism, of renal origin, digitalis in..... 782
Alcoholism, strychnine in..... 144	function, pathology and treatment..... 717	Asymlism, of renal origin, digitalis in..... 782
Alexander's operation..... 34	pathological changes in..... 717	Asymlism, of renal origin, digitalis in..... 782
Aluminum, aceto-tartrate of, an antiseptic..... 245	removal for pericæcal abscess..... 733	Asymlism, of renal origin, digitalis in..... 782
Amaurosis, from albuminuria, induction of..... 186	supposed perforation of, laparotomy for..... 108	Asymlism, of renal origin, digitalis in..... 782
premature labor in..... 186	use of the..... 713	Asymlism, of renal origin, digitalis in..... 782
Amblyopia, from albuminuria, induction of..... 186	Armstrong, Dr. S. T., address of..... 362	Asymlism, of renal origin, digitalis in..... 782
premature labor in..... 186	Army, Medical Department, changes in..... 225, 316, 348, 380, 412, 444, 476, 505, 540, 572, 604, 636, 668, 700, 744, 769, 811	Asymlism, of renal origin, digitalis in..... 782
tobacco..... 268	Arctic montanism, physiological action of..... 111	Asymlism, of renal origin, digitalis in..... 782
American institutions, genius of..... 687	Arsenic, hyperdermatitis of, in chorea..... 536	Asymlism, of renal origin, digitalis in..... 782
Ametropia, causative relation to eye diseases..... 38	in septicaemia..... 513, 531	Asymlism, of renal origin, digitalis in..... 782
Alexander's operation..... 34	in wine..... 723	Asymlism, of renal origin, digitalis in..... 782
Ammonia, picric acid in..... 268	Arteries, occlusion by ligatures..... 483	Asymlism, of renal origin, digitalis in..... 782
Ammonium salicylate in fevers..... 632	Artery, carotid, internal, rupture of..... 7	Asymlism, of renal origin, digitalis in..... 782
Amputation of hip, after excision..... 439, 466	common carotid, ligation of in abscess cavity..... 172	Asymlism, of renal origin, digitalis in..... 782
triple and multiple..... 439, 466	epigastric, ligation of..... 46	Asymlism, of renal origin, digitalis in..... 782
Amyl nitrite in dyspnea..... 316		Asymlism, of renal origin, digitalis in..... 782
Amylea hydrate..... 244		Asymlism, of renal origin, digitalis in..... 782
as a hypnotic..... 172		Asymlism, of renal origin, digitalis in..... 782
in isosmia..... 783		Asymlism, of renal origin, digitalis in..... 782
Anæmia, idiopathic..... 648, 665		Asymlism, of renal origin, digitalis in..... 782

[illegible]

- Downes, sequelæ of scarlet fever 202
Drainage and drainage tubes 372
of the peritoneal cavity 372
Drains, defective house, damages for 444
glass, for plumbing 717
Dress, of women, in relation to pelvic dis-
ease 581
Dramine, chloride of 172
Drysdale, multicentric papillomatous tumor
of broad ligament 528
Dudley, hysterectomy for carcinoma uteri 372
Dukes, report on hydrophobia 341
Duncan, Charles M., obituary of 284
rupture of funis 504
Dunlap, laparotomy on female child not an
hour old 762
Dunster, Dr. E. S., death of 762
Dunn, cocaine in migraine and asthma 712
Duty, on medical supplies 147
Dying declarations, when admissible 706
Dysentery, epidemic, microbe of 665
Dyspnea, inhalations of carbonic acid gas
in 317
nitrite of amyl in 316
quebracho in 324
EAR, bone discharged from 176
disease of, cerebellar abscess due to 202
middle, acute and chronic purulent in-
flammation of 714
Earle, influence of germ theory on obstetrics
Fecolic, acetic acid and strychnia as 585
Eckley, germ theory of disease and anti-
septic treatment 314
Eclampsia 631
with albumuria 357
Ectocardia, operative treatment of 750
Ecstema, chlorate of lime in 654
diagnosis and treatment of 524
palpebral, treatment of 782
Edes, idiopathic anemia 668
sarcoma of lung, cure 533
Education, medical, elevation of 762
medical, report on 624
Effervescent form of giving medicine 790
Eldridge, water in renal and hepatic dis-
eases 224
Eggleston, relations of the Jew to 722
Chicago and Illinois 722
Electrical resistance of the human body 18
treatment of salpingitis 583
Electricity in medicine 475
in treatment of fibroid tumors 47
with subcutaneous injections 333
Electrostatic remedy, cases in which it was
used 541
Elephantiasis, sulphide of carbon in 284
Ellis, Dr. Calvin, obituary of 205
Emaciation, facts in relation to 265
Embalming, proposed New York law in re-
gard to 664
Embell ribes, uses of 150
Embryogeny, practical courses in 604
Empuror, of Germany, case of 682
Empyema, surgical treatment of 443
Endocarditis, chronic, a cause of sudden
death 173
Enema, purgative, glycerine as a 693
Engelhardt, removal to Jena 683
Eugland, cremation in 312
density of population 156
Enteritis, membranous, treatment of 330
Enterocolitis of children 505
Ephedrin, new mydriatic 750
Epilepsy, antipyrin in 174
cured by cure of refractile 180
galvanization of the thyroid in 74
Epileptics, muscular force of 214
Epithelioma, amputation of half of tongue
for 693
ileocolic, resection for 446
of clitoris 852
of the larynx, cure of 42
of oesophagus 316
of tongue, excision of 174
Erb, declines chair in Leipzig 466
Ergot and morphia, in threatened abortion
in post-partum hemorrhage 614
in subinvolution 653
mill for obstetric bags 380
Pajot's 638
Ergotin injections, technique of 412
Erysipelas, tetanus and 662
Erythrophacin 513
Erythrophthalmia 513
Escharotic, sub-benzoate of bismuth as 45
Estlander's operation 310
Etheridge, medico-legal signs in 510
for forensic medical purposes 510
Ethics, question in 94
Ewell, Dr. M. D. 34
Excision of hip, follow of by amputation 717
Exercise, in treatment of mental and nerv-
ous diseases 174
Expert fees 64
testimony 35
Experts, State medical 715
Eye, curious accident to an 612
diagnosis, causative relation of ametrop-
ia to 3
muscles, insufficiency of 713
graduated tenotomy in 475
photograms of 412
surgery, cocaine in 123
symptoms in brain disease 11
troubles, causing migraine 310
FACE, powder grains in, removal of 46
Factories, effect in dwarfing population 757
Faith cure, exit 744
Fasting, of first century 445
Feline diseases, antitelm in 352
Feeding, rectal 352
Fees, expert 604
Female physicians of Russia 507
Femur, fracture of, with rupture femoral
artery 403
Fenger, carcinoma of cervix 56
Fenn, potassium permanganate in anthrax
and furuncle 762
Fever, epidemic typho-malarial 432
intermittent 712
puerperal, spontaneous and contact in-
fection in 621
salicylate of magnesium in 314
typhoid, after ovariectomy 758
Fibroids, operative treatment of 673
bichloride of mercury in 500
cold bath treatment of 743
etiology of 478
intestinal antiseptics in 662
management of 694
metabolism in childhood 612
mortality from in Cincinnati hospi-
tal 760
systolic treatment of 712
strophanthus in 210
symptomatology of 760
symptoms in 760
Fever, ammonium salicylate in 169
Fibroid, of uterine 516
multicentric 316
pelvic-bound 316
tumors electricity in 47
Fibroids, treatment by galvanism 666
Fibrous removal of uterus of femoral artery
uterine, removed per vaginam 445
with pelvic cellulitis 116
Fibromatosis, nasal 477
Fibrosarcoma, of uterus and broad liga-
ment 477
removal of uterus for 661
Fistula, rectal, operations for 451
Flick, contagiousness of phthisis 741
hygiene of phthisis 131
Flinn, Dr. A. W., obituary 205
Fœtus, death of in utero 702
effect of opium on 202
showing rachitis 319
Fogs, London, cause and prevention of 71
Foods, adulteration in England 714
infant, kephir as an 743
problem 743
inspection of animals required for 346
mixed and artificial diarrheas 341
Forces, improved obstetric 341
Foreign bodies, esophagotomy for 474
Fossil-male, sublimation in actinomycosis 123
Foster, Dr. Frank P., illness of 685
Fracture of femur, rupture of femoral artery
and vein with 403
of pelvis, prolonged survival after 372
of tooth fangs, united 372
Pott's, medico-legal aspect of 313
Fractures, of compressed compound of skull
treatment 718
of condyle of humerus, treatment of 467
treatment of 804
France, medical graduates in 476
Frederick, J. Malabadi, F. R. S. 304
Fresenius' course, Americans in 466
Friedrich, cast of vagina after use of orange-
blossom cone 413
Fruit, berries-me, Sallé of 413
Furs, rupture of 662
Furuncle, permanganate of potash in 762

	PAGE.
Health in Michigan.....	345, 476, 732
officer, New York, salary of.....	466
public, the public and.....	463
and wealth.....	334
rules in time of cholera.....	428
Hebra's communal bath or water-bed, surgical use of.....	468
Heart, anastomosis of, of renal origin, digitalis in.....	555
cold of.....	324
disease, hereditability of.....	721
hypertrophy of, of puberty and the menopause, digitalis in.....	555
poison, veronin.....	747
salvular disease, of prognosis in.....	467
Hereditability of heart disease.....	721
Hernia, congenital sacculated.....	50
discussion on.....	62
in separation of vertebrae.....	752
irreducible, conservative treatment of.....	81
radical operation for.....	369, 813
strangulated.....	516
in children.....	62
inguinal, Piro's method of reducing.....	586
management of.....	62
operations for.....	723
treatment of sac in.....	494
Hernial pouch in cystic duct, of ovary.....	494
Hesi, eye symptoms in brain disease.....	513
Hill, alcohol in its relations to inebriety.....	865
Hip disease, estimation of adduction and abduction in.....	748
everted dorsal dislocation in.....	142
excision of, followed by amputation.....	632
Hirst, chorea in a pregnant woman.....	185
depression of parietal bone.....	338
plaques from uterine twins.....	337
two cases of hydranion.....	628
Hoag, death of fetus in utero.....	727
placenta previa.....	91
Holmes, inversion for suspended animation.....	504
primary tumor of broad ligament.....	191
spontaneous infection.....	731
Holst, Dr. Leopold von, death of.....	508
Homer, epidemic typho-malarial fever.....	352
Horsch, inspections of food animals.....	356
Horsley, inebriety among prisoners.....	88
Hospital, children's of Cincinnati.....	125
Cincinnati, report of.....	760
for inebriates in America.....	87
Kaschnitz.....	639
obstetric cases.....	639
Saturday and Sunday fund in New York.....	157, 314
tax in St. Petersburg.....	750
Hertz, tendency of modern gynecology.....	766
Howard, C. H., Dr., obituary of.....	370
Levi, obituary of.....	378
Humerus, treatment of fractures of external condyle of.....	408
Hydranion, two cases.....	628
Hydrocele, radical cure by excision of tunica vaginalis.....	554
Hydrocephalus, senile.....	489
Hydroxylic acid in phthisis.....	61
Hydrogen gas, rectal insufflation in diagnosis of intestinal wound.....	767, 791, 767
peroxide, as a remedial agent.....	502
Hydrophobia, hot baths in.....	156
report on.....	13
Hydrophalus.....	339
Hygiene, Address in.....	790
International exposition of.....	571
Italian Society of.....	561
of phthisis, modern gynecology.....	135, 766
school.....	51
Hypoid bone, fracture of.....	762
Hypnotic, anylene hydrate as a.....	172
holdin.....	620
Hysterectomy, case of.....	36
for cancerous uterus.....	36
for sarcoma uteri.....	372
vaginal.....	173
Hysterical neurosis in a child.....	492

	PAGE.
Induction currents, action of in subcutaneous injections.....	333
Inebriety among prisoners.....	88
foreign treatment of.....	87
German law on.....	89
homocidal and suicidal.....	88
in Austria.....	87
in Heligoland.....	89
International Congress on.....	86
is there a climatic period in.....	87
lectures on.....	86, 89
legislation for.....	302
medical moral, and legislative treatment.....	87
pathology of.....	89
relation of disease to.....	89
relation to insanity.....	88
relations of alcohol to.....	565
Inebriates, hospitals for in America.....	87
asylums for in Sweden.....	89
Continental legislation for.....	88
Colonial legislation for.....	89
heart and circulation in.....	89
private mental sanatoria and.....	814
vice and disease of.....	90
Infancy, cerebral paralysis in.....	240
general muscular contracture in.....	240
sexual desire in.....	731
icterus in.....	523
Infant food, kephir as an.....	784
problem.....	743
unborn effect of opium on.....	743
young, acute rheumatism in.....	716
Infantile diarrhea, malted food in.....	666
paralysis from polio-encephalitis.....	247
puerperal, in the courts.....	734
spontaneous and contact in puerperal fever.....	621
diseases, restriction of.....	554
Inflammation, subcutaneous, caused by.....	243
loga, atomizer for office use.....	213
inhalers.....	367
Inhalations, antiseptic, in lung disease.....	445
sulphurous in phthisis.....	494
Inhaler.....	367
Injection, antihemorrhagic.....	686
Injections, hypodermic, in malarial attacks.....	748
intra-pneural of sterilized air in pneumonia.....	685
intravascular in collapse.....	686
Ipsue hospital, Illinois, can a sane man be confined in.....	490
hospitals, organization of.....	814
in California.....	594
New York provision for.....	237
pauper, care of.....	278
relation to laws of State.....	752
Insanity, expert testimony for.....	504
Intermittent fever, bacilli of.....	402
Insomnia, urethan and amyl hydrate in.....	783
Intestinal antiseptic.....	522
injury, rectal insufflation of hydrogen gas in.....	767, 791, 767
obstruction, cephaloid, artificial anus.....	567
for.....	546
from gall-stone.....	394
from tumor of broad ligament.....	528
laparotomy for.....	406
resection for ileo-caecal epithelioma.....	549
surgery, experimental.....	740
Intestine, cancerous obstruction of, operation for.....	368
gun-shot wound of.....	53
large, removal of piece of.....	366
resection of.....	516
ruptured, diagnosis and treatment.....	312
Italy, female pharmacists in.....	265
Intestinal, nasal.....	234
report on.....	739
Inversion in suspended animation from anaesthesia.....	433
gun-shot wound of.....	404
iodoform in laryngeal phthisis.....	652
poisoning, bicarbonate of potash in.....	757
tampons, in treatment of wounds.....	266
value of in surgery.....	238
lodol, use of.....	363
fractomy, for blindness of sixty years.....	142
Iron, diosynovacy.....	370
oxidized, vs. muriated tincture.....	707
perchloride of.....	714
perchloride, in diptheria.....	574

	PAGE.
Johnson, J. Taber, colposhysterectomy for cancer.....	23
cystic kidneys and tubercles.....	23
large dermoid cyst.....	32
three cases of ovariotomy.....	386, 400
treatment of sac in hernia.....	562
Johnston, tetanus, and erysipelas.....	562
joint diseases of.....	609
Jones, quarantine code.....	634
resident students at Charity Hospital.....	345
Journal, new Norwegian.....	750
JOURNAL, THE, relations to Chicago and modification of.....	702
Journals, new.....	604
Judkins, ferri oxydum vs. tincture of iron.....	701
Jurisprudence, medical, address in.....	701
as a profession.....	701
medical of inebriety.....	302
KAV, cystic kidney and ovarian cyst.....	295
Keen, hysterectomy.....	580
modification of perineum disenter.....	152
radical cure of hernia.....	309
Keller, multilocular fibroid.....	303
pyosalpinx.....	303
Kelly, white swelling of gaiter.....	337
cotton packer.....	337
knife-blade teacup.....	756
Kepir, as an infant food.....	784
Kerr, Colonial legislation for inebriates.....	88
moral and legislative treatment of inebriety.....	87
Kidney, cystic.....	528
cystic and ovarian cyst in same patient.....	295
disease, use of water in.....	707
removal of for gunshot wound.....	702
for morbid growths.....	792
surgical intervention in affections of.....	652
Kiernan, can a sane man be confined in.....	490
Illinois insane hospital.....	490
Knee, white swelling of, arthrocentesis for.....	430
Knox, pelvic presentations with perineal lacerations.....	187
Krause, Dr. Herman.....	561
LABOR, antipyrin in.....	665
complicated by multilocular cyst.....	185
premature, induction of in amniotisis.....	186
autopsy of.....	186
statistics of.....	760
hospital and out-door.....	629
Lacing, tight, and gall-stone.....	439
Lactic acid in diarrhea of children.....	652
Laidley, papillomatous cyst of ovary with hernial pouch.....	457
Lamb, bone phthisis.....	282
congenital phymosis.....	489
senile hydrocephalus.....	489
Langenbeck, memorial celebration in honor of.....	539
Langenbeck's lectures, to be published.....	540
Langer, Professor von.....	123
Lancet and bacera.....	332
Laparotomy, convalescence from, advantages and risks from purgation during.....	109
explorative.....	108
for supposed perforation of appendix.....	108
for intestinal obstruction.....	330
for intestinal obstruction.....	334
for intestinal typhoid ulcer and for intestinal obstruction.....	106
for suppurative peritonitis.....	513, 515
for tubercular peritonitis.....	408
for typhitis.....	54
on female child not an hour old.....	50
Laryngeal growth.....	484, 499
phthisis, lactic acid and iodoform in.....	622
tube, improved.....	366
tuberculous, phosphate of lime in.....	377
Larynx, cystic tumor of.....	522
diagnosis of disease of by cocaine.....	659
epithelioma of, cure of.....	427
extirpation of.....	47
paracarcinoma.....	110
prognosis and treatment of cancer of.....	359
separation from trachea.....	428
Latimer, reflexes.....	564
Lator, Dr. Robert de, death of.....	714
Lectures, medical, ownership of.....	174
property in.....	335
Legislation.....	47
medical (see Medical legislation).....	47
Lens, ectopia of.....	723
Leptopy, Russia.....	723
Lester, Dr. Thos. B. death of.....	271

	PAGE.		PAGE.
Leube, Prof., appointed to Leipzig.....	249	Medicine, address in.....	18
Leukemia cutis.....	112	a faculty of for Marseille.....	79
Levis, errors of surgery.....	799	electricity in.....	487
Lewis, tracheotomy in morphine poisoning.....	74	history of, Dr. Billings' lectures on.....	21
Library, medical, of Tokyo.....	170	progressive and conservative spirit in.....	21
Liebermeister, death-chamber in Leipzig.....	169	regulation of practice of.....	21
Ligament, broad, fibrosarcoma of.....	180	Medicines, patent, use of.....	276
primary tumor of.....	171	Medical legal aspect of Pott's fracture.....	375
papillomatous cyst of.....	128	significance of what is said in medi- cal societies.....	17
Ligatures, flat, for tying arteries.....	131	Menbrach, stress on.....	74
Lime, chlorate, excruciating in.....	121	Membrana tympani, perforation of, volun- tary.....	65
phosphate, in laryngeal tuberculosis.....	121	Meningitis, tubercular.....	1
Lipanine, substitute for cod-liver oil.....	739	Meningo-encephalitis.....	372
Litholapaxy, in removal of foreign bodies in urethra and bladder.....	131	Meustration, influence of abstinence on.....	372
Lithotomy, cocaine in.....	136	Mental action, problem in.....	176
Liver, abscess of.....	136	disease, exercise in.....	176
operation for.....	136	disorders, address in.....	136
cirrhosis of, with ascites.....	120	shock, dermatics in following.....	372
disease, use of water in.....	127	Mercer, tumor of the ileum.....	372
secondary cancer of.....	131	Mercy, alumnate, in syphilis.....	43
stab-wound of.....	136	bichloride, for children.....	157
surgery, novelty in.....	785	in septicaemia.....	603
London, medical women in.....	540	Middleton, Dr., acquitted.....	120
Loreta's operation.....	145	Methylal subcutaneously in delirium tre- mens.....	472
Loring, Dr. Edward G., death of.....	173	topical application of.....	42
Love, management of typhoid.....	544	Metritis, treatment of.....	42
peroxide of hydrogen as a remedial agent.....	262	McArthur, medico-legal aspect of.....	472
practical application of.....	472	fracture.....	533
Lowell, training school for nurses in.....	493	present state of tetanus.....	118
Lung diseases, antiseptic lozenges in.....	143	McClellan, amputation of tongue for epi- thelioma.....	731
antiseptic inhalations in.....	145	McKeniston, on paraldehyde.....	752
Lungs, tuberculosis of, Italian treatment of.....	402	Michigan, health in.....	345
Lupus, and cutaneous tuberculosis.....	80	State Medical Society.....	776
Lusk, Dr. Wm. T., honors to.....	508	Midleton, Dr., acquitted.....	120
Lutz, gunshot wound of intestine.....	54	Microbe of epidemic dysentery.....	66
laparotomy for typhlitis.....	53	Middleton, Dr., acquitted.....	120
traumatic peritonitis.....	53	Migraine, atropin in.....	732
Lymphatic vaccine, how to get without rup- turing vesicle.....	784	cocaine in.....	732
Lyser Dr. H. F., appointment of.....	435	from impaired vision.....	350
		Miles, labyrinthine vertigo.....	320
MACLEAN, Address in Surgery.....	797	Milk crust, treatment of.....	320
Magnesium, salicylate of in typhoid.....	394	for children, salt in.....	204
Magruder, cancer of sacrum and liver.....	519	counterfeit.....	603
Mal perforant, and spina bifida.....	166	in diptheria.....	585
Malaria attacks, hypodermic injections in.....	73	strange milk powder.....	373
Laver, puerperal fever of.....	373	Miller, implantation of human teeth.....	154
germ of Lavan.....	59	Mills, exercise in nervous and mental dis- ease.....	176, 175, 176
Malted food in infantile diarrhea.....	686	Minneapolis, disposal of Garbage at.....	412
Manchester, health of.....	443	Milwaukee, university of.....	618
Mann, pathology of insanity.....	472	Mitchell, Dr. S. Weir, honor to.....	516
Marg, post-partum puerperal fever.....	303	Möller, in Belgium.....	89
Marby, one year's private hospital practice.....	303	Moly, hydratiform.....	469
Marine Hospital Service, changes in sta- tions.....	32, 64, 95, 126, 150, 158, 252, 284, 348, 380, 476, 540, 636, 700, 734,	Moles, progress of.....	732
	776, 796	Moore, sketch of progress of surgery.....	605
Marine Patrol, National.....	715	Montova, Dr. Matilde.....	423
Markham, elevating the standard.....	762	Moral obliquity in childhood.....	212
State regulation of practice of medicine victims of the blunders.....	215	Morphine poisoning, tracheotomy in.....	514
Marsellles, a faculty of medicine for.....	590	Morris, unsanitary agents in common use.....	714
Martin, fibroid treated by galvanism.....	600	Morton, pericæal abscess, diagnosis and radical treatment.....	731
ichthyol in surgery.....	260	treatment of pericæal inflammation.....	731
Maryland, Medico-Chirurgical Faculty of officers.....	591	Mouths, nursing, diet of.....	776
Mason, relation of disease to inebriety.....	89	Moulton, treatment of.....	666
Massage, in neurasthenia.....	11	Moxie nerve food, composition of.....	664
treatment.....	423	Mudd, fracture of femur, with rupture of femoral vein and artery.....	403
Mastitis, puerperal.....	557	Murdoch, disease aneurism of aorta.....	303
Mays, apex expansion vs. pure air in pul- lis.....	339, 375, 393	gunshot wounds of abdomen.....	230
Meat in phthisis.....	217	Liquid Food Company's Hospital.....	303
Meco-narcin.....	715	Liquid Food Hospital, Dr. Cushing and the.....	571
Medical aid, female, to women of India.....	443	Murphy, hydratiform mole.....	479
charities, address of.....	278	gunshot wounds of abdomen.....	230
college commencement, in Cincinnati.....	722	puerperal tetanus.....	479
colleges, how to limit number of.....	722	uterine fibroma removed per vaginam.....	47
in Cincinnati.....	722	Muscles, recti, insufficiency of.....	313
societies in.....	235	Muscroft, Dr. S. C., death of.....	735
division of Pension Bureau.....	235	Muscular contracture, general, in an infant.....	214
examiners, a State board of.....	47	force of epileptics.....	214
Pennsylvania Board of.....	812	Musser, morbid anatomy of peri-cæal in- flammation.....	83
experts.....	705	Motivation, voluntary, by.....	659
laws of Ohio.....	145	membrana tympani.....	659
legislation.....	17, 173, 127,	Mydriatic, new, ephedrin.....	750
need of.....	703	Myositis, acute idiopathic.....	133
library association, Ontario.....	750	syphilitic.....	133
men, and colleges, limitation of.....	653		
profession as a whole.....	722	NAMES, physicians', unethical use of.....	271
profession, how to lessen overcrowding profession, relations to the public.....	300	Nancere, importance of primary sur- gery of old nerves.....	427
science.....	280	Nasal breathing, obstructed, results of.....	362
societies, medico-legal significance of utterance in.....	866	fibromata.....	477
supplies, duty on.....	147, 508	Nash, examination of bacteria.....	381
women in London.....	540		
		Nauy, appointed to Strassburg.....	221
		Navy, Medical Department, changes in station.....	221
		Neale, J. Searles, section and craniotomy.....	55
		Neuigen, criminal.....	7
		Nephrectomy.....	42
		for gunshot wound.....	7
		for tubercular growths.....	7
		for pyogenic phositis.....	368
		Nephritis, digitalis in.....	515
		Nephro lithotomy.....	11
		Nerve, phrenic, anatomy and physiology of.....	212
		transplantation of from rabbit to man.....	715
		Nerves, suture, fundus and thorax.....	447, 173
		Nervous disease, exercise in.....	175, 176
		origin of rheumatoid arthritis.....	175
		system, influence of uterine displace- ments.....	71
		Neuritis, cocaine in diagnosis of.....	121
		Neurasthenia, massage in.....	11
		Neurosis, hysterical in a child.....	42
		Newall, modern practice of surgery.....	611
		Newhall, Dr. E. G., death of.....	303
		New York, Academy of Medicine.....	127
		law in regard to embalming pro- posed.....	64
		Post Graduate School, faculty.....	723
		provision for insane.....	237
		quantitative statistics.....	47
		health officer, salary of.....	406
		Nicotine, antagonized by acetanilide.....	713
		Nissen, Swedish movement and massage treatment.....	423
		Nitrites in history.....	121
		Norris, cancer of stomach.....	303
		Nose, deformity of, plastic operations for.....	718
		fibromata of.....	477
		injected irritability of.....	507
		sarcoma.....	507
		Nurses, pension fund for.....	632
		training school for in Lowell.....	495
		colored.....	717
		Nursing mothers, diet of.....	260
		OATMAN, eclampsia.....	534
		Obesity, in young women, influence on men- struation.....	373
		Obstetrics, influence of germ theory.....	373
		Esophagotomy for foreign bodies.....	464
		Esophagus, epithelioma of.....	516
		gangrene of.....	43
		Oil, carbolic, in.....	559
		cotton seed, detection of in olive oil.....	559
		Omphale Medical Club.....	678
		Omphalocele, technique of.....	153
		Ophthalmology, erythrophloia in.....	623
		Ophthalmo, new, cultural system, with.....	757
		Optum, effect of on an unborn child.....	29
		legislation, proposed.....	26
		smoking in London.....	632
		Orange-blossom cone, cast of vagina after use of.....	42
		Orbit, pulsating tumor of.....	443
		Osteitis deformans, multiple sarcoma with.....	71
		Osteonorrhagia in ruptured patellar ten- don.....	171
		Otis, hints for sending patients to Colorado.....	507
		Otology, Congress of.....	507
		Otorrhæa, acute and chronic.....	714, 785
		Ovarian cyst, ruptured.....	51
		cyst, strabismic.....	557
		Ovary, papillomatous cyst, with.....	557
		pouch in old cicatrix.....	457
		Ovarian tumor, and cystic kidney in same patient.....	213
		tumor, single cyst.....	393
		Ovaries and tubes, cystic and adherent.....	23
		Ovariectomy.....	247
		double.....	516
		old cicatrix containing hernial pouch.....	427
		three bad cases of.....	375
		typhoid after.....	357
		Ovum, four weeks', entire.....	305
		PALATE retractor, self-retaining.....	212
		Pancreas, diseases of, surgical treatment.....	613
		Paralysis, cerebral, in infancy.....	243
		diphtheritic.....	755
		facial, nervous predisposition to.....	23
		infantile, from polo-encephalitis.....	23
		Parish, strangulated ovarian cyst.....	527
		Parker, W. Thornton, Assistant Secretary of the Association.....	812
		Parkes, nephrorrhomy.....	22
		Parotid, anomalous exit of ducts.....	64
		Parish, is there a climacteric period in in- fertility.....	87

	PAGE.		PAGE.		PAGE.
Parsons, alcohol in therapeutics.....	752	Porcher, removal of hypertrophied pharyngeal tonsil.....	283	Refraction, correction of error of in cure of epilepsy.....	189, 207
Parvov, Address in Otolithics.....	791	Porro operation in Queensland.....	561	Reid, Address in Medical Jurisprudence.....	201
Pateilar tendon, ruptured, osteonorrhiaphy for.....	171	Porter, progress of.....	530	Reid, elected Professor.....	812
Patent nostrils, use of.....	536	President's address to Association of American Medical editors.....	579	Regeneration, influence of obesity on.....	393
Patton, prognosis in valvular disease of the heart.....	167	Potash, bicarbonate, in iodoforn poisoning.....	757	Respiration, of blood and tissues.....	723
Pelvic abscess, encysted.....	516	Potash, permanganate, in anthrax and furuncle.....	752	Respirator, tracheotomy.....	474
Pelvic abscess, dress of women in relation to.....	359, 330	Potash, fracture, medicolegal aspect of.....	355	Retrospection, operative treatment of.....	349
Pelvis, fracture of, long survival after.....	78	Powder grains, method for removing from face.....	408	Reviews:	
Pemphigus of the conjunctiva.....	126	Practice, illegal, in New Jersey.....	572	Ball, the Rectum and Anus.....	186
Paste for.....	189	Practitioner, regulation of.....	53	Bartholow, Materia Medica and Therapeutics.....	95
Penrose, dermoid cyst of ovary.....	308	Pregnancy, protracted in.....	185	Brown, The Throat and its Diseases.....	158
operation for cancerous destruction of bowel.....	308	complicated by multilocular cyst.....	185	Bruck, Health Resorts in Australia, Tasmania, and New Zealand.....	539
Prof., resignation of.....	32	tubal, treatment of.....	601	Dulles, Accidents and Emergencies.....	539
Pennsylvania, sanitary precautions in.....	475	vomiting of, abortion for.....	40, 117	Ex, Photographic Illustrations of Skin Diseases.....	638
Penny wise, pound foolish.....	719	Presentations, pelvic, perineal lacerations with.....	181	Gerster, Aseptic and Antiseptic Surgery.....	218
Pension Bureau, medical division of.....	230	Preston, pericardial inflammations.....	563	Goulet, Diseases of Man.....	795
Pepper, clinical study of albuminuria.....	72	Prewitt, multiple tumors of the head.....	52	Harvard Medical School, Medical Publications.....	763
diagnosis of pericardial inflammation.....	72, 83	Price, hospital and out-door obstetrical cases.....	629	Hyde, Diseases of the Skin.....	668
Pepper's System of Medicine to appear in Italian.....	508	multilocular cyst complicating labor.....	185	Keys, Surgical Diseases of the Genito-urinary Organs, including Syphilis.....	763
Peppermint water in pruritus pudendi.....	784	nephrectomy for gunshot wound.....	306	Mays, Theine in Neuralgia.....	603
Pepsin, artificial, and digestion.....	792	operations for strangulated hernia.....	753	May, Obstructive Diseases.....	539
Pericardial inflammation, morbid anatomy of.....	69, 83	Perineal and fibroid.....	756	Simson, Treatise on Dislocation.....	763
diagnosis of.....	72, 83	piece of large intestine.....	306	Talbot, Irregularities of the Teeth.....	219
treatment of.....	75, 83	rectal injections of hydrogen gas in diagnosis of visceral wound.....	791	Physician's Bedside Record.....	763
Perineoplasty, indications and methods.....	653	removal of kidney for gunshot.....	216, 792	Tyson, Practical Examination of Urine.....	663
Perineum distender, modification of.....	150	Removal of ovary after ovariotomy.....	756	Valentine, 300 Medical Points.....	572
lacerated, braided sutures for.....	46	Pringle, homicidal and suicidal inebriety.....	88	Wall, The Prescription.....	763
lacerations of, with pelvic presentations.....	181	Pringle, Dr. J. Ford, death of.....	560	Waxham, Intubation, of the Larynx.....	732
Peritoneal cavity, drainage of the.....	402	Price essays, Lomb.....	66	Wokes, Nasal polypus.....	218
Peritonitis from traumatic hamorrhage into ovarian cyst.....	210	report on.....	508	Year-Book of Treatment for 1887.....	507
perforation, surgical treatment of.....	115	Gabriele Bellini.....	64		
suppurative, laparotomy for.....	513, 531	Wm. F. Jenks.....	188	Revue Médico-Pharmaceutique.....	265
traumatic.....	53	Prices of the Lombard Institute.....	466	Raybourn, electricity in modern medicine.....	557
tubercular.....	408	of New York Medical-Legal Society.....	275	Reynolds, stricture of the urethra.....	33
Perityphilitis, laparotomy for.....	513, 531	Probe, bullet, telephonic.....	203	Rheumatism, acute, complications in.....	760
Pertussis, symptoms and treatment of.....	717	Profession, overcrowding of, how to lessen.....	722	in young infant.....	336
treatment of.....	21	Prognosis, Pye-Smith on.....	300	Richardson, heart and circulation of inebriates.....	741
Petition, legislation for inebriety.....	89	Prokosow-Marstorf, inebriety in Austria.....	30	laryngeal growth.....	89
Pharmacists, female, in Italy.....	206	Prostate, cause of.....	120	Ritter, Dr. Nikola, death of.....	561
Pharmacopoeia, a New.....	104	Prostate, malignant tumors of.....	748	Rivers,.....	64
Pharyngeal tonsil, hypertrophy of.....	104	Protopsis, pulsating tumor of orbit with.....	443	Robison, treatment of pertussis.....	21
Pharynx, adenoid vegetations of vault of.....	659	Pruritus pudendi, peppermint water in.....	784	Rohé, restriction of contagious and infectious diseases.....	564
Phenacetin in pyrexia.....	659	Pseudo trichinosis.....	784	Rosenthal,.....	255
Phimosis, congenital.....	246	Psoriasis, cause of.....	284	Roske, electro-static remedy.....	541
Photograms of the eye.....	246	Pterygium, causation and treatment of.....	251	Rothmund, Dr. August von.....	561
Phrenic nerve, anatomy and physiology of.....	349	evulsion in.....	101	Rumbold, tracheotomy respirator.....	474
Phthialic patients, purification of air of rooms of.....	28	Ptomines.....	122, 358	Rush, movement to.....	500
Phthisis, anti-septic and antipyretic treatment of.....	563	Public, the, and public health.....	463	Rush, female physicians of.....	527
apex expansion's pure air in.....	325, 339	Puerperal convulsions, post-partum.....	410	leprosy in.....	753
contagiousness of.....	794	fever, nature and prevention of.....	387	Ruth, effect of opium on u. born child.....	293
creosote in.....	492	spontaneous and contact infection.....	621		
hydrofluoric acid in.....	151	in.....	587	Sabin, Dr. Henry L., obituary of.....	506
hygiene of.....	136, 151	mastitis.....	657	Saccharimeter, Fleischl's.....	212
in Cincinnati hospital.....	760	infection in the courts.....	656	Saccharin in diabetes.....	231
laryngeal, lactic acid and iodoforn in meat in.....	552	septicemia, corrosive sublimate in.....	615	Sacrum, cancer of.....	519
portage.....	497	sublimate internally in.....	663	Sacrum, in diarrhoea.....	524
statistics and climatology of.....	516	tenus.....	663	Salpingitis, electrical treatment.....	783
sulphurous inhalations for.....	495	Puncture, abdominal, in tympanites.....	632	Salt in milk for children.....	567
Physician, responsibility of.....	701	Pupils, unequal width of in internal diseases.....	331	solution, injections in collapse.....	172
Physicians as individual members.....	278	Purdy, differential diagnosis of uræmia.....	285	Sanitaria, private mental.....	814
female of Russia.....	614	saccharin in diabetes.....	231	Sanitary affairs, State, action of Mo. State Society on.....	571
names of, unethical use of.....	271	Purgative enemata, glycerine as a.....	665	arrangements of large community convention, at Lewisburg, Pa.....	505
Pierce, hemorrhoids from chest wound.....	582, 595	Purpura after mental shock.....	640	inspectors, association of.....	787
Placenta from unvial twins.....	337	Pyelitis, digital dilatation of.....	346	management of shipping.....	632
previa.....	268	Pyonchrosis, debridement for.....	412	precautions in Pennsylvania.....	475
retained, treatment of.....	268	Pyosalpinx.....	120, 393	registration of.....	312
Plastic operations for nasal deformity.....	718	Pyrexia, phenacetin in.....	685	Sarcoma in bone.....	29
surgery.....	15			multiple, with osteitis deformans.....	61
Pleuro-pneumonia, infectious, anatomy of.....	558			of lumbar vertebrae.....	533
Plumbers, education and registration of.....	32			pharyngeal.....	267
Plumbing, glass drains and pipes for.....	787			of supra-nasal capsules.....	389
Plummer, address to California Medical Society.....	501			uteri, vaginal hysterectomy for.....	372
Pneumatic cabinet, its claims.....	153			Sauerharing, symptomatology of typhoid fever.....	286
Pneumonia, in children.....	614			Schall, treatment for.....	542
of.....	675			Scalds, anti-septic treatment of.....	654
infusion of digitalis in.....	580			Scapula, extirpation of.....	144
statistics and climatology of.....	516			Scarlatina, fifty cases of.....	551
Pneumo-thorax, injections of sterilized air in.....	685			pharyngeal, of carbolic acid.....	166
Poisoning, atropia.....	750			sequela of.....	502
boric acid.....	297			Scarlatinal abscess cavity, ligation of common carotid in.....	172
iodoforn, bicarbonate of potash in.....	757			Schinus molle in blennorrhagia.....	620
m-phrine, tracheotomy.....	249			Schistocerca, type in.....	124
Polo-encephalitis, infantile paralysis from.....	249			hygiene.....	66
Pomeroy, Chas. V., obituary of.....	74				
Population, density of in England.....	150				
dwarfing of by temenets and factories of England and Wales, increase of.....	312				

INDEX.

viii

Schröder, mal de buste of.....	710	Stamm, gall-stones, congenital absence of.....	3	Therapeutic, of typhoid fever.....	13	
Scotch oats, essence of.....	507	State Medicine, address of.....	2	Thomson, graduated, address of.....	13	
Scrophulous glands, disease, relation to other forms of tuberculous.....	159	Sternum, resection for retrosternal disease.....	111	Thomson, medical, address of.....	13	
Sea-sickness, antipyrin in.....	144	Stevens, corrosive sublimate in puerperal and other septiciemias.....	163	Thomson, private medical, address of.....	13	
Secur, typhoid in a child 13 years old.....	753	Stewart, improved obstetric forceps.....	341	Thomson, private medical, address of.....	13	
Seider, hypertrophy of tonsils.....	757	Stillman, new forceps for forceps.....	341	Thomson, private medical, address of.....	13	
Senn, Dr. N., appointed to Rush College.....	415	Stimulants to be avoided in skin diseases.....	332	Thomson, private medical, address of.....	13	
insufflation of hydrogen gas in visceral injuries.....	717	Stomach, cancer of.....	3	Thomson, private medical, address of.....	13	
Septicæmia, arsenical treatment of.....	531	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
corrosive sublimate in.....	531	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Septiciemias, sublimate internally in.....	563	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Sexual desire in infancy.....	734	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Shakespeare, name, control of quarantine.....	718	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Sherrman, enterocolitis of children.....	515	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Shipping, sanitary management of.....	612	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Shock, mental, dematose following.....	585	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Shoemaker, purpura after.....	620	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Shoemaker, cause and treatment of poor.....	812	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Shoulder, dislocations of, new method of.....	80	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
reducing.....	80	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Siaux, medical work among.....	332	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Skin diseases, anthraxolin in.....	462	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
stimulants to be avoided in.....	332	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
leukæmia of.....	112	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Skull, depressed compound fractures of.....	718	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Sloan, inflammation about the cæcum.....	250	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Sloan, sexual desire in infancy.....	734	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Smallpox, at San Francisco.....	367	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
report on.....	358	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Smith, abscess of cerebellum from ear disease.....	202	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
dose of corrosive sublimate for.....	107	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
function, pathology of.....	107	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
of appendix veriformis.....	707	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Smoker's vertigo.....	605	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
statistics and climatology of phthisis and pneumonia.....	816	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
SOCIETY.....		Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Baltimore Academy of Medicine.....	360	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
California State Medical.....	501	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers.....	505	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Chicago Gynecological, 5th.....	371	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers for 1887-1888.....	371	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Medical, 21, 118, 207.....	366	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers.....	366	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Medico-legal.....	505	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers.....	505	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Cincinnati Academy of Medicine.....	464	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Medical.....	120	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Clinical of Maryland.....	310	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Connecticut State Medical.....	464	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers.....	464	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
District of Columbia, 22, 4, 170.....	275	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers.....	275	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
German Medical of Philadelphia.....	685	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Gynecological of Boston, 116, 2, 3.....	580	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers.....	460	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Indiana State Medical.....	464	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Massachusetts, 10th anniversary.....	656	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers.....	816	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Medical and Chirurgical Faculty of Maryland.....	861	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Medical of Pennsylvania.....	781	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
officers.....	713	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Missouri State Medical, action of regarding national quarantine and state sanitary affairs.....	571	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Obstetrical of Philadelphia, 145, 185, 245, 304, 337, 348, 627, 566.....	339	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Philadelphia Medical.....	81, 116, 173, 212, 369, 341, 471, 631, 773.....	39	Stork, in removal of.....	745	Thomson, private medical, address of.....	13
Pathological of Philadelphia.....	39	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Sacramento for Medical Improvement, officers.....	614	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
St. Louis Medical.....	71, 47, 49, 47.....	4	Stork, in removal of.....	745	Thomson, private medical, address of.....	13
Suffolk District.....	24, 339.....	144	Stork, in removal of.....	745	Thomson, private medical, address of.....	13
Soda, benzoate of in uræmia.....	144	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Sodic salts in gynecological practice.....	534	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Sodium salicylate, hallucinations from.....	534	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
in tonsils.....	534	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Spina bifida, mal-perforant and.....	466	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Spinal abscesses, treatment of.....	537	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
concussion.....	537	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
cord, excision.....	537	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Spine, rotary lateral curvature of, treatment of.....	500	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Spleen, operation for abscess of.....	395	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Spinelectomy.....	340	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Spinastræa, treatment of.....	340	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	
Spinederm, called to Dorpat.....	827	Stork, in removal of.....	745	Thomson, private medical, address of.....	13	

	PAGE.		PAGE.		PAGE.
Urethra, in insomnia.....	753	Vertebrae, sarcoma of.....	533	Willard, foreign bodies in the urethra and bladder.....	19
Urethra, female, ulcerations of.....	73	Vertigo, labyrinthine.....	375	Williams, amylen hydrate.....	244
foreign bodies in, removal by litholapaxy.....	19	Vesicants, use of.....	520	rupture of internal carotid.....	7
male, physics of.....	460	Viral statistics, in Illinois.....	572	Wilson, technique of oöphorectomy.....	153
stricture of.....	33	Virehow, in Egypt.....	757	Wm. B., death of.....	96
Urethral irrigation in gonorrhoea.....	492	Vision, impaired, causing migraines.....	360	Wine, arsenic in.....	753
Uric acid diathesis, colchicum in.....	536	Vomiting of pregnancy, abortion for.....	43, 117	cirrhosis of liver with ascites.....	667
Urine, stoppage of natural flow, causes of.....	362			specimen from typhoid fever.....	120
sugar in, Marson's test for.....	354			Witte, gastrotomy for removal of fork.....	745
Uterine appendages, removal of.....	145	WAKEFIELD, Dr. J. F., obituary of.....	160	address in mental disorders.....	812
displacement, influence of on nervous system.....	815	Walcott, Address in State Medicine.....	637	Wolf, ptomaines.....	122
elevator, new.....	371	Walls, detection of dampness in.....	572	Wood, artificial digestion and pepsin.....	792
fibroid, large.....	516	Ward, amyl nitrite in dyspnoea.....	314	Woodbridge, abortive treatment of typhoid.....	672
fibroma removed per vaginam.....	42	Water bod., Hebra's, surgical use of.....	408	Woodbury, effervescent firm of drugs.....	720
fibroma with pelvic cellulitis.....	116	boiling, typhoid bacilli and.....	2, 8	nephrectomy for pyonephrosis.....	397
mole.....	255	action on typhoid bacilli.....	394	Woods, hallucinations from sodium salicylate.....	310
sedative, uterine, antipyrin as a.....	143	impure, disease from.....	810	Wool, tanning.....	718
Uterus, fibroids of, treatment by galvanism.....	660	on railway cars.....	160	Wound of left ventricle.....	523
fibrosarcoma of.....	150	supply of growing cities.....	668	stab, of chest, hæmothorax from.....	538
removal of.....	659	use of in renal and hepatic disease.....	227	of liver and colon.....	546
removal of, for cancer.....	303	Waxham, casts of trachea and bronchial tubes.....	247	Wounds of abdomen, rectal insufflation of gas in.....	767, 791, 887
removal of, for fibroma.....	546	improved laryngeal tube.....	366, 377	gunshot, penetrating, of chest.....	232
removed in pregnancy.....	394	report on intubation.....	729	iodoform tampons in.....	266
sarcoma of, hysterectomy for.....	372	Weather, relations of summer diarrhoea and cholera infantum to.....	314	of the head.....	391
unique removal of.....	596	Weill's disease.....	471	Wright, effects of alcohol on body and mind.....	87
unusual tumor of.....	275	anatomy of infectious pleuro-pneumonia in cattle.....	398	evulsion in pterygium.....	181
VACCINE lymph, how to obtain without puncturing vesicles.....	784	Wells, causation and treatment of pterygium.....	251		
Vagina, cast of, after use of orange-blossom cone.....	490	West, Joseph O., obituary of.....	128	XERODERMA, pigmentosum.....	205
double.....	666	White, progressive and conservative spirit in medical science.....	253	YATES, rupture of funis.....	667
Valve, aortic, rupture of.....	577	radical treatment of hernia.....	813		
Vanzetti, Prof. Tito, death of.....	527	self-retaining palate retractor.....	212	ZIEGLER, germicidal and other properties of nitrohydrochloric acid.....	65
Varicel, Dr. T. R., obituary of.....	94	White swelling of knee, arthrectomy for.....	430	medical science.....	250
Vein, femoral, rupture of with fracture of femur.....	473	Wick, salicylate of ammonium in fevers.....	157	Zinke, case of Cæsarean section.....	413, 449
Ventricle, left, wound of.....	533	Wiener klinische Wochenschrift.....	530		
Vernonin, new cardiac poison.....	745				



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